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AIR FORCE

• The Magazine of AMERICAN AIRPOWER | Published by the Air Force Association

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he Great Missile Hoax

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The tubeless tire that stands the **Cold Test**— and **Red-Hot** landings!

The engineer pictured above is getting a reading of *minus 65° F.* on the Goodyear Tubeless Airplane Tire just taken out of the freeze room.

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Goodyear Tubeless Airplane Tires can stand the test of extreme temperatures—can qualify for arctic or tropic service on the same airplane where other tires may fail!

One reason for this is that Goodyear has developed new compounds and processes which maintain a barrier against air seepage where other materials break down and disintegrate when operating in extreme cold.

Much of this topflight performance which has made Goodyear Tubeless first on so many aircraft can be laid to an exclusive Goodyear development:

3-T Nylon, processed and tempered by multimillion-dollar equipment.

As a result, these tires—bonded ply upon ply, wedded with natural rubber, girded with cord that tends *to "fight back" rather than stretch* under heat—give performance that is downright revolutionary.

Their dependability for jet age aircraft can be summed up in one clear fact: *More aircraft land on Goodyear tires, wheels and brakes than on any other kind.* Goodyear, Aviation Products Division, Akron 16, Ohio, and Los Angeles 54, California.

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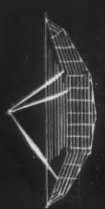
Where Research and Development Work for America's Global Air Power

Leadership: Avionics Design and Packagi

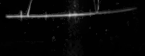
COLLINS in GROUND COMMUNICATION

Collins engineers, designs and supplies the equipment, installs, and puts into operation integrated point-to-point communication systems of any scope. The Collins system engineering staff is backed by the finest equipment in the world, whether standard MF, HF or VHF, Transhorizon "scatter," microwave relay and multiplex or single sideband HF. Typical of Collins communication progress is "Kineplex" — a high speed data transmission system doubling communication capacity.



COLLINS in AMATEUR RADIO

In the early 1930's Collins set the standard in Amateur radio and, through continuous design and development, has raised this standard to its present single sideband station — the most honored and prized in the Amateur fraternity. This station is the top performing rig on the air with its kilowatt KWS-1 transmitter and highly selective 75A-4 receiver. Many of the leaders in the electronics industry became acquainted with Collins through the Company's superior Amateur equipment.



Collins

CREATIVE LEADER IN AVIATION ELECT

CNI

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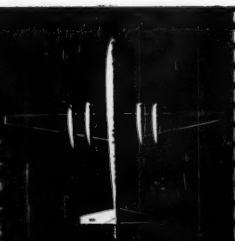
Collins CNI is an efficient electronics package designed to each aircraft type and provides a common logistics base by utilizing identical modules for all aircraft.

dvanced packaging techniques plus increased attention to oblems regarding vibration, heat transfer and mutual erference have led to development of the Collins-designed N/ASQ-19 Integrated Electronics System.

cDonnell Aircraft Corporation, first to use this design, s been instrumental in proving and refining the system.

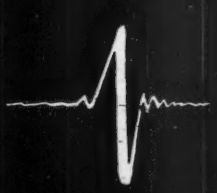
LLINS in IATION

ns completely oufits airline, military and busi- aircraft with the most advanced communica- navigation, flight control and instrumentation ms in aviation. Many new lightweight, reduced- versions are now being delivered. Collins ned the original Integrated Flight System, leads mbining comm/nav/ident units into a single act "CNI" package for new military aircraft. ontinues to pace the industry in developments rborne radar, ADF, ILS, VOR, HF and VHF unication.



COLLINS in COMPONENTS AND TEST EQUIPMENT

The degree of precision and reliability of Collins products requires development by Collins engineering of components such as Autotunes and Autopositioners, Mechanical Filters, oscillators, heat reducing tube shields and ferrites. These developments and other high quality components are sold by a Collins subsidiary, Communication Accessories Company of Hickman Mills, Missouri. The same principles of accuracy and reliability apply to Collins test equipment, built especially for Collins, but adaptable to testing other equipment types.



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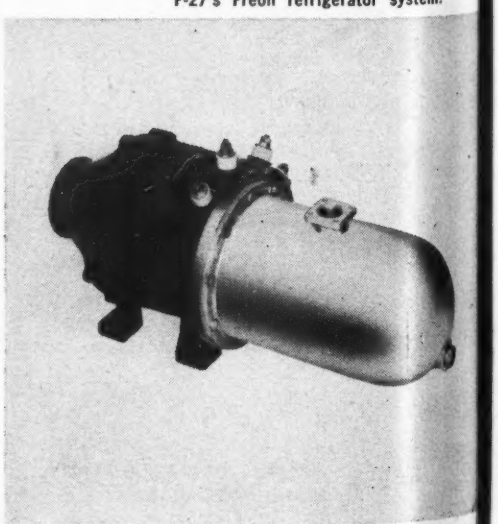
Now the air traveller on a regional route and the executive in a business aircraft can enjoy air-conditioned comfort unsurpassed by any transportation medium. In flight or on the ground, he will be kept comfortably cool if he's in a Fairchild F-27. The F-27 has air conditioning—and pressurization—equalled only by the most luxurious transcontinental and intercontinental airliners.

For the F-27, Fairchild's Stratos Division has developed a new Freon refrigeration system which continues to cool the aircraft even when it stands on the airport with the engines shut down. No ground service, other than electrical power, is necessary. The air conditioning and pressurization system—for which Stratos has full design responsibility—will provide a comfortable cabin under any conditions, from a sun-baked Las Vegas airport to the cold of a Quebec winter.

The Heli-Rotor Compressor for the F-27's Freon refrigerator system.



STRATOS

A DIVISION OF FAIRCHILD ENGINE AND AIRPLANE CORPORATION

Main Plant: Bay Shore, L. I., N. Y.
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AIR FORCE

THE MAGAZINE OF AMERICAN AIRPOWER

Volume 40, Number 6 • June 1957

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FROM AN ORIGINAL PAINTING FOR CECO BY R. T. HANDVILLE*

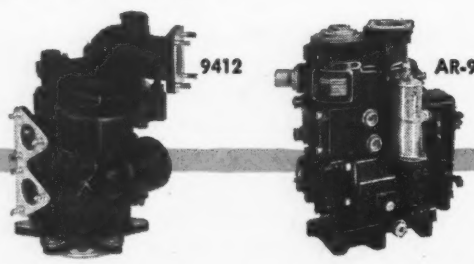
Contributing . . . to superb performance

North American's F-100 Super Sabre is powered by a Pratt & Whitney Aircraft J-57 turbojet with *afterburner fuel control* engineered and built by Chandler-Evans.

Products, too, are "known by the company they keep", and CECO is proud to be airborne with many of the latest and finest military and commercial aircraft.

* * *

Typical CECO fuel system components: Model 9412 Fuel Pump is a lightweight, gear-type pump with a centrifugal boost element. It supplies 52.3 gpm flow at 750 psi. The AR-9 Afterburner Fuel Control (for new, larger jets) maintains fuel flow at point value accuracies heretofore impossible.



CECO
SYSTEMS / CONTROLS

CHANDLER-EVANS
WEST HARTFORD 1, CONNECTICUT

**Beautiful, full-color reproduction appears on the cover of CECO's informative folder,* Unitized Fuel Control Systems. *For your copy, write to Dept. E.*

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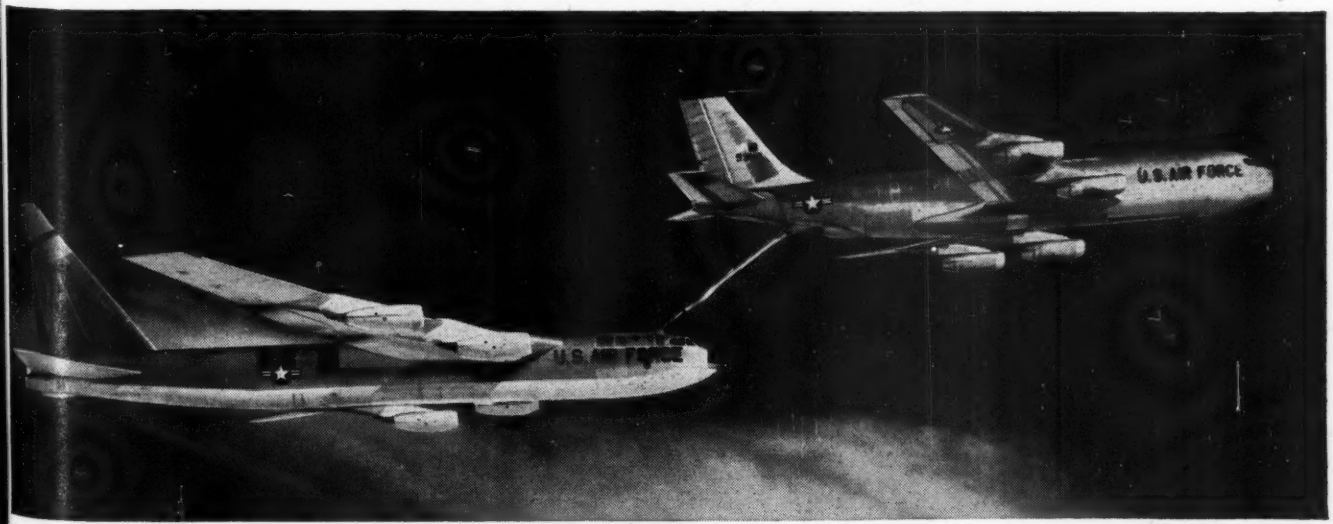
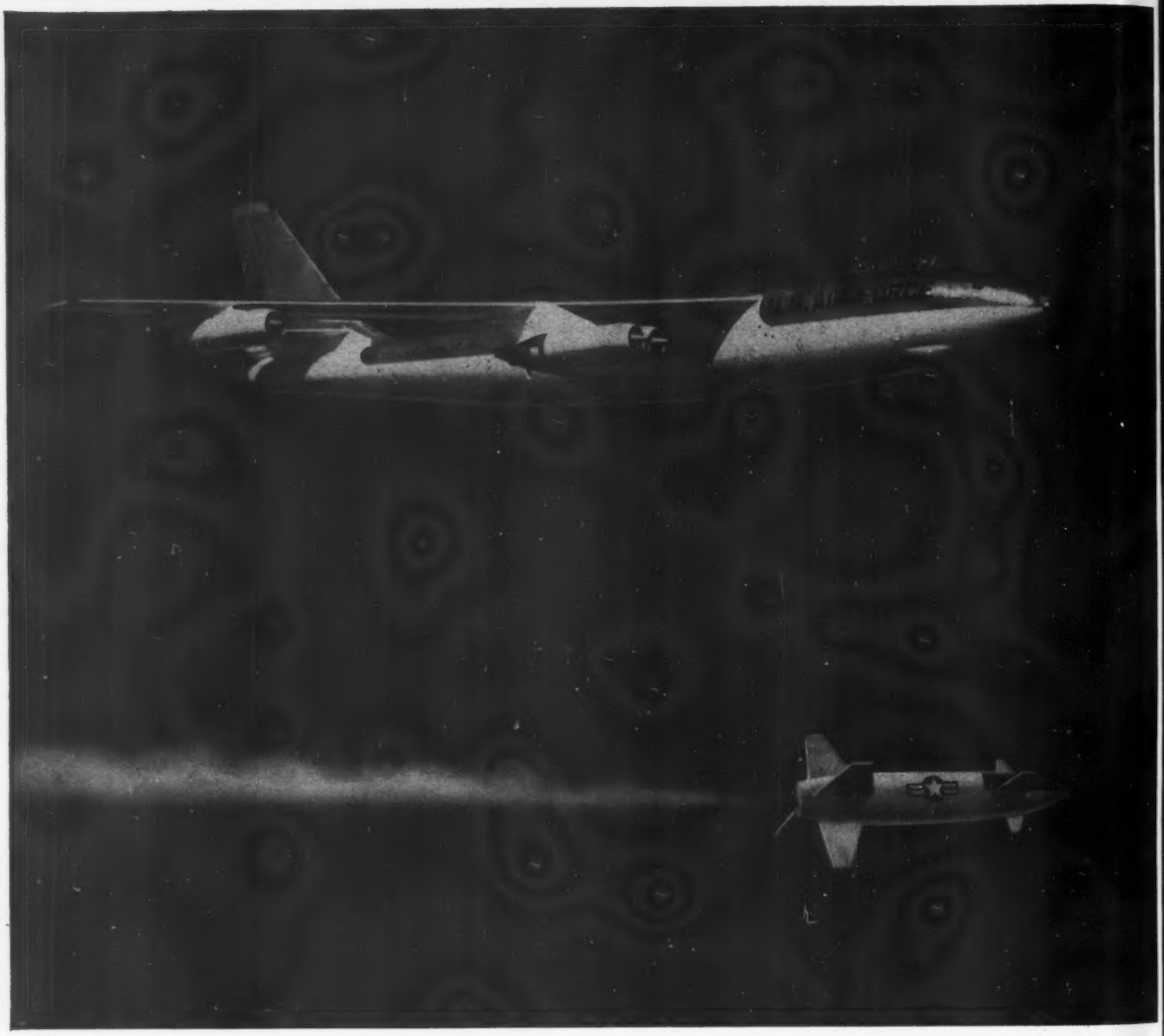
IT'S A SMALLER WORLD. Air Force crews made aviation history when they flew three Boeing B-52 jet bombers around the world, nonstop, in 45 hours, 19 minutes. The B-52s were refueled aloft from Boeing KC-97 tankers. Previous 'round-the-world record was set in 1949, by the Air Force's famous B-50 "Lucky Lady"—another Boeing.

THESE THREE BOEING B-52s are the first jets ever to circle the earth nonstop. They covered 24,325 miles, including a simulated bomb run off the coast of Asia. After the landing, the Air Force flight commander commented: "With a plane like the B-52 and the fine crews we have, the flight was strictly routine."



FIRST JET TANKER-TRANSPORT, the Boeing KC-135, is now in production for the Air Force. The KC-135 will greatly increase the efficiency of aerial refueling by delivering fuel at altitudes and speeds best suited to jet flight.

BOEING



Launched toward the Future in WEAPON SYSTEMS MANAGEMENT

Rascal — GAM-63 air-to-surface missile of the USAF—is an operational example of complete weapon systems management by Bell Aircraft. As prime contractor, Bell's responsibilities embraced the design, development, and production of the entire system including airframe, guidance, rocket engine, servo-mechanical devices, launching and ground support equipment as well as flight testing and training.

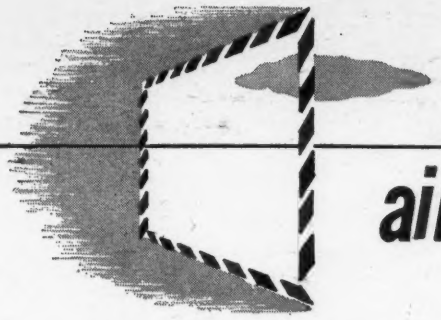
The personnel responsible for this successful program has recently been regrouped to form a new **Guided Missiles Division.** Its sole function is to provide complete and coordinated management and production for any weapon systems program.

The men who make up this division are a skilled and diversified team of specialists with a total of some 100,000 man-years of experience in guided missiles. Prior to "Rascal", they were responsible for Tarzan, Shrike and Meteor. Current responsibilities also include important components for the Niké, Hustler, Regulus, Navaho and various I. C. B. M. and I. R. B. M. programs.

These men have past success to attest to their capabilities and foretell future accomplishments. They will be heard from again and again for important achievements in the years ahead.

BELL Aircraft corp.

Guided Missiles Div.
BUFFALO, N. Y.



air mail

Consternation

Gentlemen: Imagine my consternation when I noted in "Airpower in the News" in your May issue that I had been summarily fired by the Air Force Association. On the other hand, I am happy to note that the year of my release was not forecast.

Maybe General Mooney doesn't like the idea either!

Maj. Gen. George R. Acheson
Commander
Middletown Air Materiel Area
Olmsted AFB, Penna.

● *Imagine our consternation when we noticed this bobble too late to make any changes before the May issue went to press! We reported that "Maj. Gen. Henry K. Mooney, Commander, Fifteenth AF, would become Commander of Middletown AMA, AMC, on May 15." General Mooney, who has been Deputy Commander of Fifteenth AF, will actually become Commander of SAC's Sixteenth AF on July 1. General Acheson stays in his present command. His new Deputy Commander at Middletown AMA is, as we correctly reported, Brig. Gen. Charles B. Root, formerly Deputy Commander of Northeast Air Command. Our apologies to both General Acheson and General Mooney.—The Editors.*

Not Getting Through

Gentlemen: My hat is off to Mr. Harvey T. Youwer, Chicago, Ill., for his letter in the "Air Mail" section of your April issue. He and I stand on common ground. I happen to be an ex-flight engineer with about two thousand hours and 112 hours' pilot time, and was staff sergeant with the 38th Bomb Group, 405th Bomb Squadron (B-25s) in the Pacific Theater, but when I read AIR FORCE I feel like a lost boy in an amusement park.

After not having flown for ten years I got disgusted with what I had forgotten and the things I didn't know and went out to the local airport, checked out in a Cub, and got a license. It is a nice feeling to be back in aviation, although in a small way. The things I don't know about the jet age would fill volumes. I am very often asked embarrassing questions by the younger set and by my business associates.

I would almost sell my soul for a ride in a jet and to be able to converse intelligently on some of the problems of jet flying.

How about letting some of us old flyboys of World War II in on the ground floor of this jet age? Make the transition from conventional aircraft to jet in plain and simple language. I wouldn't be surprised if we couldn't pass this thing along to the younger set and thus become a large force of unofficial recruiters. Believe me when I tell you the stories of the Air Force are not getting through to them.

David S. Rolston
Broomall, Penna.

● *It's a problem. We had barely begun to catch on to the jet business when the missiles muscled in.—The Editors.*

For Enlisted Personnel

Gentlemen: This is to inform you that a non-profit association open to "regular" enlisted personnel has just been organized.

The association will make available to the enlisted man certain benefits formerly enjoyed by and available only to commissioned officers and warrant officers.

The association was formed by a group of senior enlisted men stationed in and near the Pentagon. It will initially offer its members emergency loan privileges, scholarship grants to deserving children of members, and low-cost group life insurance.

Patterned after the ten-year-old Armed Forces Relief and Benefit Association (for officers) this *new* association will offer regular enlisted personnel benefits and opportunities similar to those now enjoyed by over 18,000 officers on active duty.

Membership is now open to regulars of all grades (male or female) from all branches of the service. All officers, directors, and advisors will serve without compensation. The Board of Directors, composed of enlisted personnel, will be elected annually by the members. Additional benefits will be considered as membership increases.

The major benefit of this program, $10,000 of group life insurance, was designed to supplement the benefits provided by the Survivors Benefit Act and to replace, where applicable, the "free" government life insurance no longer available.

Maj. Gen. Robert S. Moore, USA (Ret.), has consented to act as advisor to the association, without compensation.

Information and applications may be obtained by writing the Armed Forces Enlisted Personnel Benefit Association, 422 Washington Building, Washington 5, D. C.

T/Sgt. William J. Curtis, USAF
Director

For the Armed Forces to Decide

Gentlemen: On February 28, the Senator from Minnesota, Mr. Humphrey, made some remarks on the Senate floor condemning unification, and quoted a speech by a William V. Kennedy, taken from *The American Mercury*.

Mr. Kennedy kindly refers to the Single Manager Plan as a "notable advance." I am entirely convinced, however, that if he really had the opportunity to hear or read the address before the ICAF on November 23, 1955, by Mr. Robert C. Lanphier, Deputy Assistant Secretary of Defense, he could hardly have the animosity he displays toward unification.

I feel the very careful thinking which has gone into the Single Manager Plan is just the sort of thing we are talking about for command problems. Mr. Humphrey actually characterized the move as one to "Prussianize" the armed forces. The Senator should know that the American people would stand for no such thing. The armed forces officers are taught not to overstretch their authority and every effort is made to keep the services closely aligned with public opinion. It is recognized that Americans can be led, but cannot be driven. This is the reverse of Prussianism.

Most—or perhaps that is saying too much—many of our people are utterly wrong in their conceptions of armed forces officers. They constitute, in the main, the finest flower of American manhood. They always have, and al-

(Continued on page 11)

SHE MADE THE TRIP STANDING UP!

(on the fastest transcontinental passenger flight ever flown)

With a Lear Autopilot keeping a steady "hand" on the controls, the Boeing 707 prototype streaked across the country at speeds up to 692 m.p.h. So smooth was this record-breaking flight, so astonishingly free from vibration, pitch, roll or yaw, that a coin balanced on edge stood up without tottering.

LEAR

LEAR INC., GRAND RAPIDS DIVISION, GRAND RAPIDS, MICHIGAN
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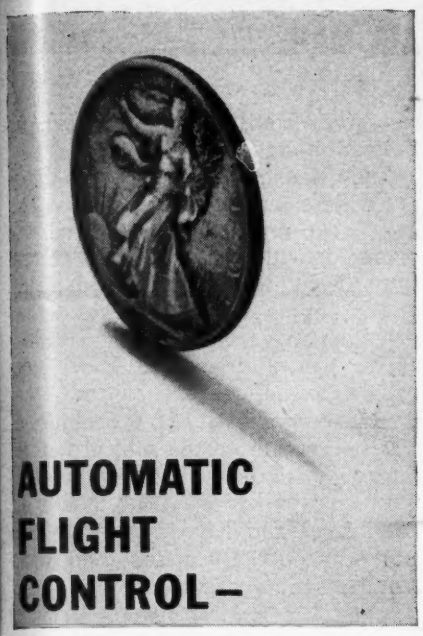

AUTOMATIC FLIGHT CONTROL—

A Status Report

With the KC-135 autopilot which proved so successful on the 707 prototype, Lear continues to supply flight control systems to more types of airborne vehicles* than any other manufacturer. This unmatched experience in automatic flight enables Lear to continue its leadership in concept, system design and function capabilities. In addition to the modern requirements for stability augmentation, all-attitude maneuvering, automatic approach, track control (heading, altitude, mach), and safety monitoring and limiting, Lear offers and is producing these more sophisticated advances in the art of flight control:

1. Automatic turn coordination in all flight conditions through direct side slip control.
2. Control stick (or wheel) and rudder force steering utilizing closed loop control throughout the maneuver.
3. Either displacement knob or rate switch controller.
4. Single-axis engagement for stability augmentation.
5. All-transistorized techniques (germanium or silicon).
6. Both ARINC (½ ATR for complete autopilot system) or tailored packaging.
7. Automatic control over VOR cone of confusion.
8. Automatic servo torque limiter.
9. G-Limiting.
10. Maximum-attitude monitoring.
11. Provision for complete duality of autopilot systems.

*Subsonic fighters, supersonic fighters, jet transports, jet tankers, jet bombers, piston engine transports, light planes, drones, helicopters, missiles.

For detailed product data sheets, write to the Grand Rapids Division, Grand Rapids, Mich.

LEAR

ways will. One of the hardest things for people generally to understand is that the armed forces are much more dedicated to keeping this country out of war than any other group, save the Congress.

If the Air Force is on top in public esteem it is because theirs is the most dangerous assignment. Moreover, the Air Force is not an organization which looks backward. It is a forward-flying group of men in whom we may take great pride.

Now, this idea of unification is not something for the public to decide. It is the job of the armed forces, the Congress, and the Chief Executive.

Our safety valve, if any is needed, is found in the leadership of the Army and Navy with men like Admirals Radford and Burke, to name only a couple from that service; and men like Generals Ridgway, Bradley, and Marshall in the Army. Such men are far above petty bickering, or engaging in grandiose poses for more power.

If unification is sound, it will come; and it will come through the type of leadership we now have in the armed services. Once the questions quit coming from such men, unification will be a fact.

Dan McCarty
Wichita, Kan.

Two Mayors

Gentlemen: I am confused!

On page 75 of April AIR FORCE Magazine you report: "From the Madison area, Lt. Col. Margaret Steele, ISO officer for the 37th Air Division at Truax Field, reported the base has had no complaints since the '102s arrived, although the flight pattern sometimes is directly over the town and the Wisconsin state capitol. Madison's mayor, in a television 'Report to the People,' predicted that while the '102s may seem noisier than the jets the townspeople have been accustomed to, the '102s climb away so much faster the town will find the noise less objectionable."

On page 59 you quote a Mayor Hartsfield as saying: "When it was publicized that I would be on this program, I received a letter from the mayor of Madisqn, Wis., in which he states that they are very much dissatisfied with the operation of jets. He sends me several newspaper editorials and articles, and he also sends a list of accidents, together with a resolution on the part of his city government, which cites that since 1921 there have been twenty-eight accidents either at the Madison Airport or in the immediate vicinity."

Are both of these people talking about the same mayor?

Lt. Col. Theodore W. Bozarth
Montgomery, Ala.

● *The answer is yes.—The Editors.*

Civility

Gentlemen: Thank you for permitting us to reprint Maj. Gen. H. K. Mooney's article ["Helpful Hints for Air Force Living," March '57 issue]. We won't be able to measure its value; however, we are sure that its lessons will profit all. It reminded me of some "memory work" that I was asked to recite in OCS, always in a brace. I am sure you remember General Ulio's famous statement about courtesy—"Sir, courtesy is politeness, a civility in which a superior cannot afford to be outdone by a subordinate. It is the lubricant of human relations—a thing which has no limits to rank or status. To demand it of a subordinate and to fail to return it in full measure is to indicate either an arrogance or a lack of interest which has no place in leadership. The inexperienced often feel that politeness implies softness, or worse, that in a subordinate indicates bootlicking. Nothing is further from the truth. Real courtesy is simply common, everyday civility."

Capt. James G. Randolph
Griffiss AFB, N. Y.

Reader's Evaluation

Gentlemen: Having been a subscriber to AIR FORCE since last June, I feel well enough acquainted with it to more accurately evaluate my regards for it than I could have a few months ago. AIR Force is consistently of the highest quality, more unbiased than the average publication (I have canceled many subscriptions because of one-sidedness), and of extreme value to members of the Ground Observer Corps and Civil Defense.

There are two additions that I would like to see made to the magazine. First, it should come in a special student edition, or at least the regular edition at a student rate. Several of my teen-age observers would like to subscribe but can't afford $5 for the yearly subscription and membership. Second, I would like to see special pictures of the latest planes in use to help the Ground Observer Corps in recognition of new types of aircraft and new uses for old types. For instance, now that the Air Force has a jet tanker, not every multi-jet we see can be reported as a bomber. I didn't even know they were ready

(Continued on following page)

Dependable oxygen breathing equipment is a "must" for the military pilot on all altitude pressure suit flights. Firewel is proud to have its new integrated oxygen regulator system (F2400)* in this important role on these outstanding aircraft: America's 1st Supersonic Bomber—U. S. A. F. B-58; the U. S. A. F. Supersonic Fighters F-102, F-104 and F-105, *plus* Speed and altitude record flights of the U. S. Navy F-11F. For information on this and other Firewel aviation equipment, write or wire.

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AIR MAIL—CONTINUED

for service until I saw an ad in AIR FORCE.

The magazine keeps me up-to-date, but a little outside advertising might help make my neighbors as well acquainted with our nation's defense system and its needs. A good share of the population doesn't even know that your magazine exists, as I didn't a year ago. Furthermore, they have only a vague concept of what the military services do in peacetime. I was so ignorant on the subject before I met AIR FORCE that I wondered why we even had an Army, Navy, or Air Force. You have a duty to the American public: acquaint them with AIR FORCE Magazine.

Mrs. Beverly C. Soth
Brackney, Penna.

NJUFO Group

Gentlemen: As a member of the AFA and a regular and eager reader of AIR FORCE Magazine, I should like to make a request to your readers for information about the so-called "flying saucers" which have been plaguing pilots, radarmen, tower operators, technical assistants, trained observers, and just plain people, for many years.

The North Jersey UFO Group is a private, non-profit organization undertaking research in the field, trying to solve the enigma of the unidentified flying objects. I am sure your members are aware that the Air Force is spending a great deal of time and the taxpayers' money in similar activity.

The AFA, your publication, and your members can and should help in this effort, by sending any and all pertinent information to such organizations that are seriously interested in such work. We would be deeply in the debt of anyone sending us such information.

Lee R. Munsick, Editor
UFO Newsletter
P.O. Box 606
Morristown, N. J.

We Love 'em!

Gentlemen: Hope you people don't get tired of complimentary letters. . . .

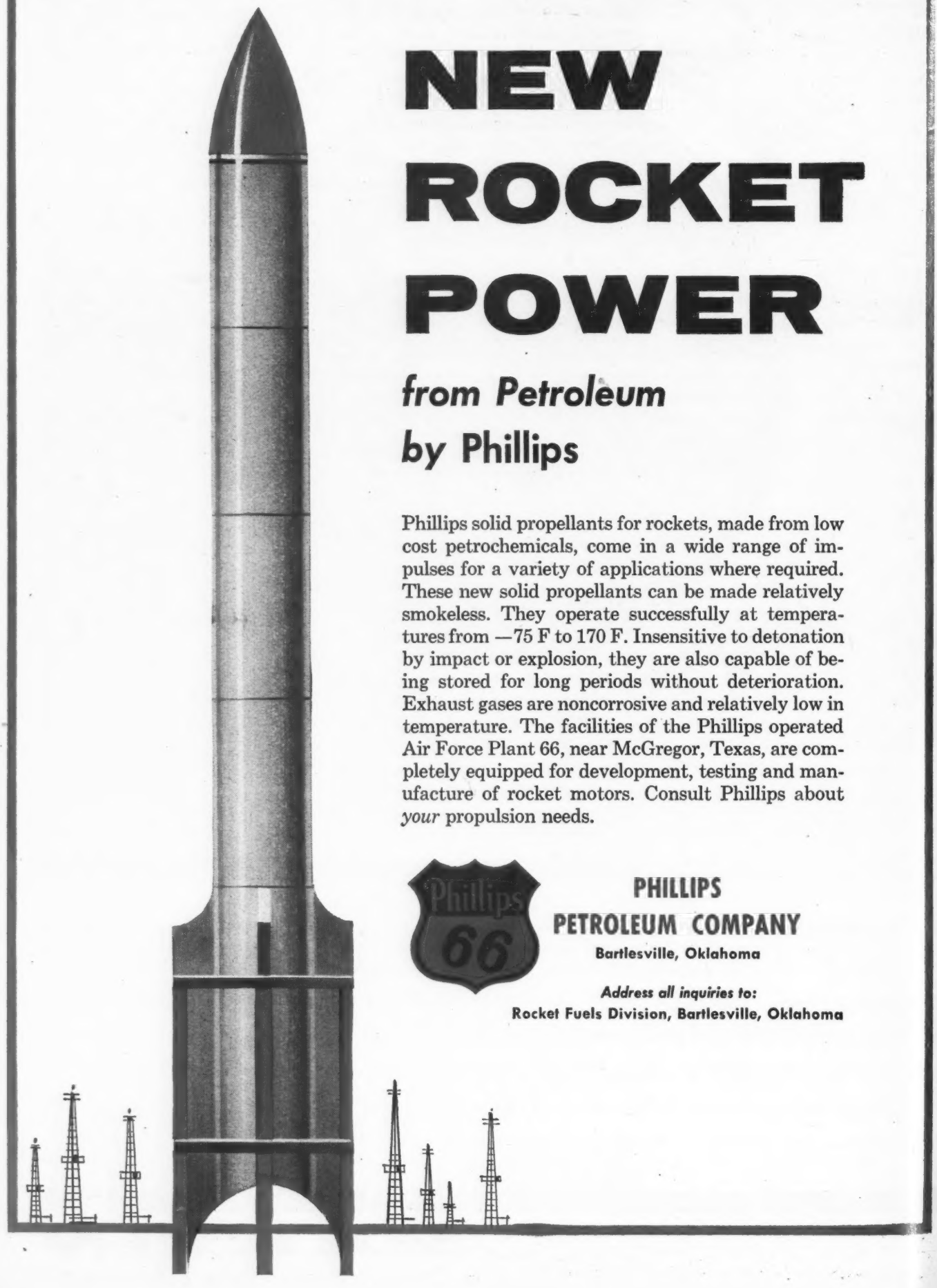
I just want to say that Clay Blair's "The Last Flight of the X-2" [March '57] is one of the finest pieces of aviation writing I've ever read. Capt. Milburn Apt died defending this country just as surely as if he had been killed in combat, and this fitting tribute to him and the other Edwards Air Force Base test pilots is the least we can offer in gratitude for being able to sleep safer at night.

Robert F. Dorr
Washington, D. C.

THE CURTAIN OF FIRE Air protection for whole cities and strategic areas is no longer in the "talking" stage. It is now being installed—a combination of the deadly fire of NIKE anti-aircraft weapon batteries and the U.S. Army Signal Corps' new Martin MISSILE MASTER. As the country's first electronic system designed to provide an integrated screen of radar surveillanee, target detection and fire coordination, MISSILE MASTER makes possible peak effectiveness of anti-aircraft missile battery operation. A measure of the critical importance of MISSILE MASTER is the fact that the system already has been designated for a number of our most vital civilian and military areas. It is one of the most significant defense developments of our time.

MARTIN

BALTIMORE·DENVER·ORLANDO



NEW ROCKET POWER

from Petroleum by Phillips

Phillips solid propellants for rockets, made from low cost petrochemicals, come in a wide range of impulses for a variety of applications where required. These new solid propellants can be made relatively smokeless. They operate successfully at temperatures from —75 F to 170 F. Insensitive to detonation by impact or explosion, they are also capable of being stored for long periods without deterioration. Exhaust gases are noncorrosive and relatively low in temperature. The facilities of the Phillips operated Air Force Plant 66, near McGregor, Texas, are completely equipped for development, testing and manufacture of rocket motors. Consult Phillips about *your* propulsion needs.

PHILLIPS PETROLEUM COMPANY
Bartlesville, Oklahoma

Address all inquiries to:
Rocket Fuels Division, Bartlesville, Oklahoma

wing tips

By Wilfred Owen

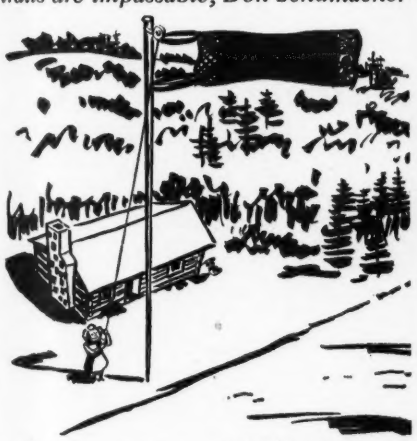
Capital Airlines is working on the railroads. It operates two "flying office cars" for the Chesapeake & Ohio—a DC-3 and a Beechcraft Bonanza. The Chessie air fleet speeds up track inspection and repair work and dispatches train officials to the many small cities and towns served by rail.

* * *

The Taylor Wine Co. of New York is using photo-reconnaissance methods to keep tabs on its grapevines. Poor drainage areas are spotted by plane, photographed, and pinpointed for workers maintaining the 388,500 individual vines.

* * *

Last winter seven Idaho ranchers contracted to have their groceries delivered by plane. When the Snake River is frozen over and mountain trails are impassable, Don Schumacher



—the flying grocer of Hell's Canyon—makes his weekly rounds. Customers must provide a landing strip 500 to 600 feet long and have a pillow case, denim trousers, or a petticoat flying in the breeze for a wind sock.

* * *

The round-the-world air tourist fare is $1,227.30.

* * *

Researchers are coming up with a bright paint so arresting that it is expected to help reduce mid-air collisions. Orange-red seems to be the best bet, with fluorescence added.

* * *

The importance of measures to reduce the hazard of collisions in the air is reflected in reports of 452 near misses during the last four months of 1956. The near-collision reports were received from 259 military planes and 193 civil planes, carrying a total of 4,429 people.

* * *

The CAA airways system employs 8,000 men and women to handle the traffic jam on our 90,000-mile airway network. Air traffic has reached a volume of 10,000 instrument flights per day and a landing or take-off every 1½ seconds.

* * *

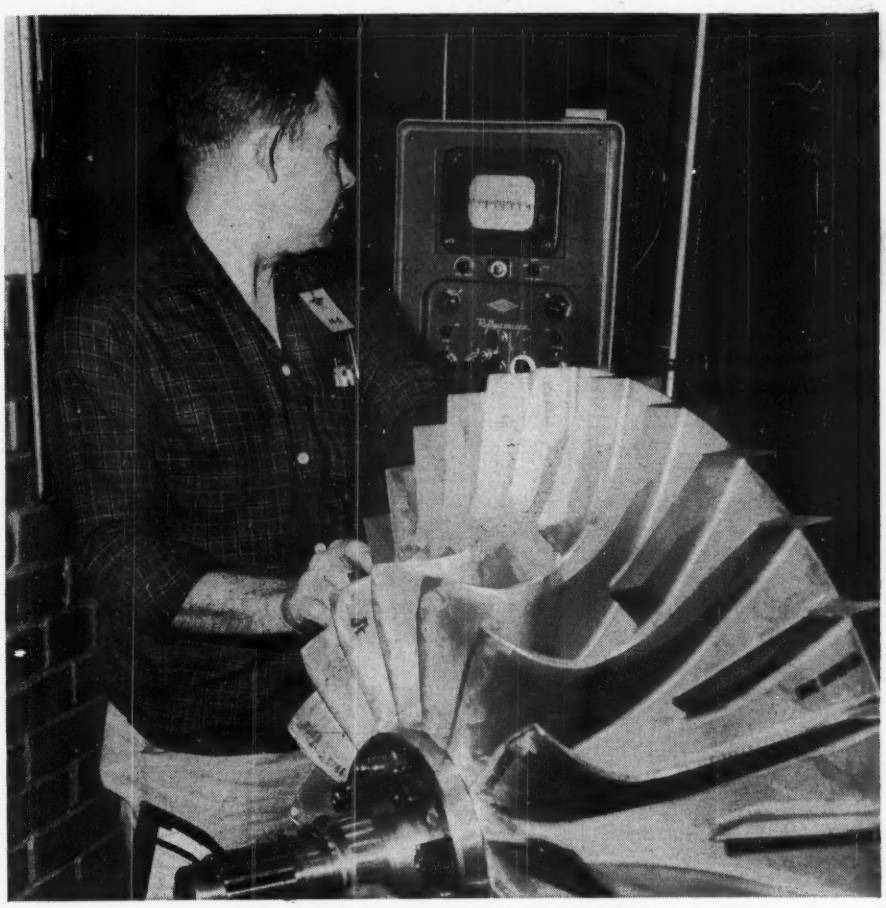
CAA has now begun controlling all airspace for IFR flights above 24,000 feet, instead of merely the space along the designated airways. Next step will be to provide total airspace control for instrument flights above 15,000 feet, with a target date of January 1958. But personnel and equipment to provide positive separation of all aircraft at these upper levels will not be available until 1962.

* * *

Local service air lines now blanket the country, serving 500 cities and towns with flights that average less than 200 miles per passenger and less than 100 miles per hop.

* * *

International helicopter services provided by Sabena Belgian Airlines have carried 50,000 persons on the Brussels-Lille-Rotterdam-Bonn circuit since 1953. Twelve-seaters now link the Belgian capital with Paris on a five-flights-daily schedule.



THE SCIENTIFIC "EYE"

Making certain that Uncle Sam's airmen fly in confidence and in safety, Southwest Airmotive uses an impressive array of science's latest devices and techniques in the overhaul of turbo-jet engines. Here, a Sperry ultra-sonic Reflectoscope sends sonic vibrations through a jet compressor to probe for possible defects. From the cathode ray screen, a skilled operator determines whether the compressor can do its vital task reliably and efficiently or should be "retired" from action. Perfection is the only accepted standard.

1932 A QUARTER CENTURY OF LEADERSHIP 1957 **Southwest Airmotive Co.**

LOVE FIELD DALLAS

AIRPOWER IN THE NEWS

Wide World Photos, Inc.

President Eisenhower looks on as Donald A. Quarles takes oath as Deputy Secretary of Defense. White House administrative officer Frank Sanderson, right, officiates.

Wide World Photos, Inc.

At the same time, also at the White House, Mr. Sanderson swears in James H. Douglas, Mr. Quarles's replacement as Air Force Secretary, while President Eisenhower looks on.

■ Two years ago, when **President Eisenhower** proposed **"Open Skies"** over Europe and the US, Russia denounced the aerial inspection plan **as "spying."** Since then, the ratio of missile strength has begun to favor the Free World, which now, from NATO nations and other US allies near Russian borders, could hit Russia with **intermediate-range missiles,** while the US land mass lies well beyond the range of all Russian missiles except the ICBM.

Increasing US strength is believed to be the primary reason why the Russians recently came up with **a counter-proposal to the President's plan.** This is what the Russians offered: In exchange for an unlimited look at **Alaska and all of the US west of the Mississippi River,** the Russians would open up **all of East Siberia** (but not including their Lake Baikal atomic test area). In Europe the Russians would look at part of **Great Britain** and all of **France and Germany** in return for our aerial inspection of **all the satellite countries** but practically **none of Russia** itself. This they call "approximately equal."

The Pentagon called the proposal **"outrageous,"** but it did represent the first hope that the Russians were **willing to bargain** at all over "Open Skies."

■ A Department of Defense report released last month carried a warning note from **Deputy Defense Secretary Donald A. Quarles** who wrote the report while still Air Force Secretary. "The Soviet Union is now able to inflict **catastrophic damage** on this country in a single day," Mr. Quarles said. "The ability of **our air defense system** to meet this threat is steadily growing, but the threat is also growing—at an equal or possibly greater rate. We must anticipate the greatest threat of all to our national security —the **intercontinental ballistic missile**—and prepare an effective defense against it."

■ **Air Force Gen. Nathan F. Twining,** soon to become the nation's top military man, told a Pentagon press conference that **the long-range, nuclear-armed bomber**—and not the guided missile—will **remain the principal lifeguard of the peace for some years to come.**

Speaking shortly after President Eisenhower had nominated him to be next Chairman of the Joint Chiefs, General Twining indicated that the United States would have to consider the **use of nuclear weapons in "little wars" as well as in a general war** as a deterrent to aggression. He sounded a warning concerning the so-called "weapons of the future." Although there is no question as to the high promise of missiles, the nation's strategy should not be based on these weapons until they have been proven and are available in operational quantities.

As General Twining sees it, the United States will depend **on the forces in being** for its security, during a long period of transition. These include a large Air Force, capable of **prompt action anywhere** in the world, as well as a modernized Navy and Army.

■ Air Force personnel and equipment to operate the **first guided missile unit in the Far East** have arrived on **Formosa.** They're equipped with **Martin TM-61 Matadors.** Three such groups, making up one tactical missile wing, have been stationed in Europe for some time.

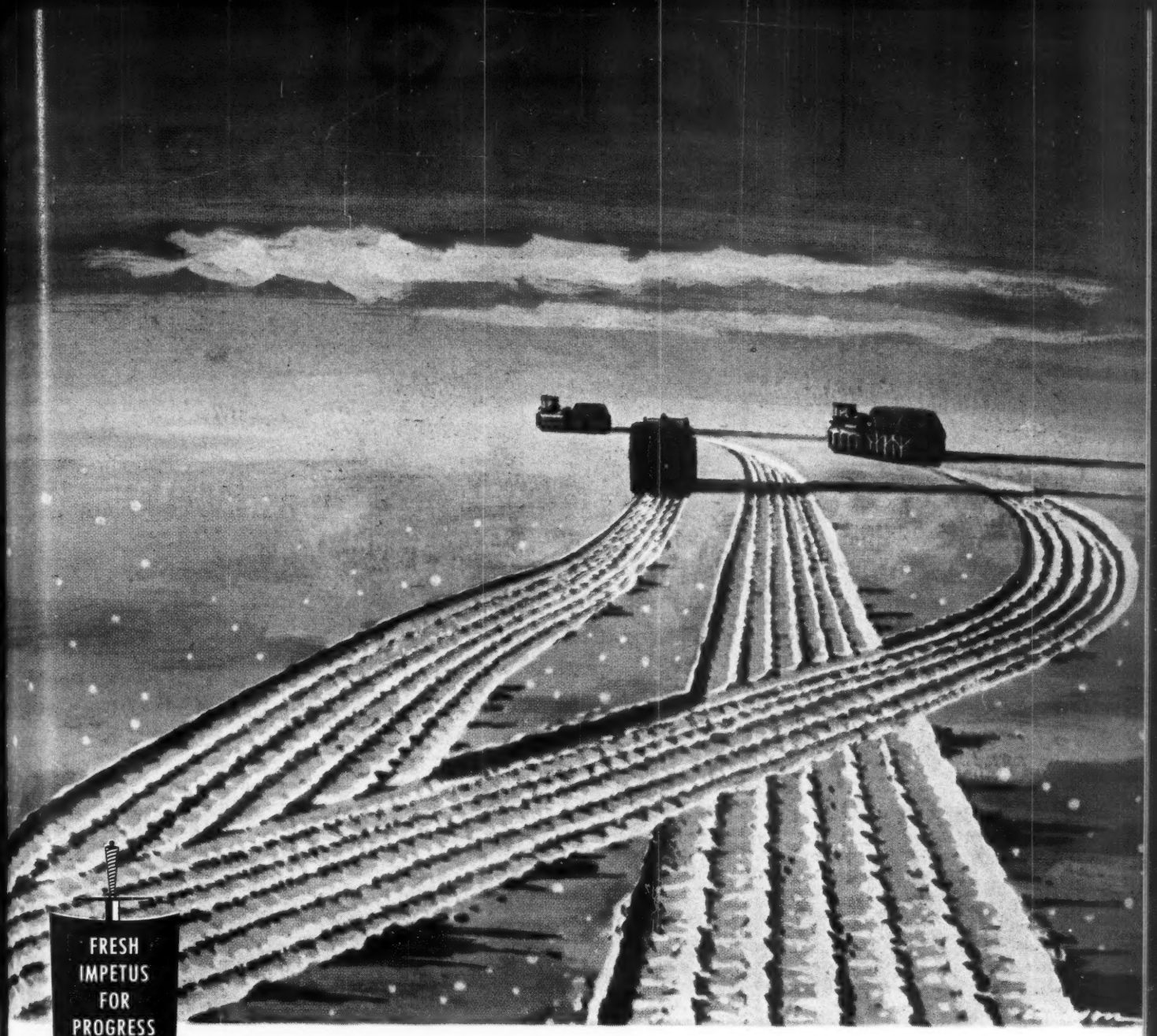
■ Production of the **Boeing B-52 Stratofortress** will level off at its present **fifteen a month** instead of being stepped-up to twenty a month, the earlier production goal. The stretched-out schedule will not change USAF plans to buy **a total of 603** of the huge, intercontinental jet bombers, but delivery will not be completed until **late 1959,** rather than six months earlier as originally planned.

■ Also slated for a **production slow-down,** from twenty to fifteen per month, is the **Boeing KC-135 jet tanker.** The stretch-out was sharply criticized by **Sen. Henry Jackson** (D.-Wash.) who said, "We have a substantial shortage of tankers, not just to refuel the B-52s, but also B-58s and B-47s, and a whole family of tactical aircraft. The KC-135 is the only jet tanker we have."

■ The first **intercontinental missile squadron** in the AF will be formed later this year, as part of the Strategic Air Command. The squadron, scheduled to be ready for action by mid-1958, will be equipped with **the Northrop Snark,** a sixty-nine-foot, air-breathing missile **designed** to travel 5,000 miles to its target. The Snark now in an advanced stage of development is undergoing flight tests.

The Air Force has also announced that the **first Ballistic Missile Base Support Squadron** was activated earlier this

(Continued on page 19)



For Canadair...*The Sky is NOT The Limit!*

What we have learned *in the air*—we apply *on the ground.* See these snowmobile-type vehicles: they are a solution to an unique problem of transport over trackless terrain through snow, muskeg, sand or water, and were Canadair-developed and manufactured for the Canadian Armed Forces.

And Canadair's research and development division is ready to undertake other special jobs in many fields, such as: research, development problems, custom designs, electronics, digital and analogue electronic computing, structural and mechanical testing: in all a service designed to offer fresh impetus for progress.

Inquiries are invited: write directly to Vice-President/Engineering, Head Office.

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CA57-UST-R

A SEVEN-JET B-47?

In this case, yes. The seventh jet, in the rear fuselage pod-mounting shown above, will be Orenda's Iroquois, designed for supersonic speeds.

The Boeing B-47 is on loan from the United States Air Force for flight testing the Iroquois in the initial subsonic phases.

ORENDA
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MEMBER A. V. ROE CANADA LIMITED & THE HAWKER SIDDELEY GROUP

year at Camp Cooke, Calif. This new unit, part of **ARDC's Western Development Division,** reflects the new planning system which gives WDD responsibility for both research and development of the ICBM and "achievement of the initial operational capability."

Meanwhile, WDD will be known from now on as **"Headquarters, ARDC Ballistic Missile Division." Maj. Gen. Bernard A. Schriever,** who has been WDD Commander, will continue to head the operation.

■ The government is establishing **twelve new "super-skyways"** designed to handle non-stop flights **between the West and East coasts.** The newly designated airways should improve air safety by putting virtually all transcontinental airliners into **"controlled airspace."** Two are ready for immediate use, and the remaining ten will be put into operation as soon as navigating equipment is available. Target date for operation of the entire system is **November 1958.**

■ The Air Force has a new method by which it hopes to **talk enemy troops into surrendering.** A high-flying bomber drops a bomb-like gadget. After descending to 12,000 feet, a ribbon-type parachute opens, slowing the missile's fall. At 6,500 feet, the nose of the remaining part separates, exposing a speaker. Then from 4,000 feet to the ground, the speaker **broadcasts a taped plea** to the enemy troops to surrender.

■ **AIRPOWER NOTES. . . . Operation Plumbob,** a series of low-yield nuclear tests got under way last month at the AEC's Nevada test site, with all services participating. ARDC personnel and equipment are playing the major Air Force role. . . . First observance of the **AF Golden Anniversary** from outside the US took place May 13 when three **TAC North American F-100Cs** flew from **London to Jamestown, Va.,** in conjunction with the 350th anniversary of the landing of the first settlers in Virginia. . . . **Clovis AFB, N. M.,** will be renamed Cannon AFB, in honor of **Gen. John K. Cannon** who commanded the Tactical Air Command from 1950 until his retirement in 1954. Earlier, in World War II, he was responsible for all air operations in Southern France and later was Air Commander-in-Chief of all allied Air Forces in the Mediterranean. . . . **A mysterious flying object** that easily outdistanced British Javelin jets sent up to intercept it over the British Channel last month proved to be a **visitor from France**—not outer space, as first thought. It proved to be one of the new 1,100-mph, French delta-wing planes, **Miracle,** which its builder, **the Dessault Co.,** claims are impossible to catch.

■ The advisability of **rearward-facing seats** for air transports was disputed last month during the Aero Medical Association Convention at Denver, Colo. **Air Force Lt. Col. John P. Stapp,** now head of the AF's Aero Medical Field Laboratory at Holloman AFB, N. M., who gained fame for his **deceleration tests in rocket-powered sleds,** urged wider adoption of backward seating. He pointed out that tests show man can tolerate **forces up to thirty-five Gs** in rearward-facing seats.

But **Dr. L. G. Lederer,** Medical Director of Capital Airlines and chairman of the ATA Medical Committee, disagreed. "We are not convinced at present . . . that we are negligent in any way in not providing rearward seats," he said. He was supported by **Dr. Ross A. McFarland** of the Harvard School of Public Health who contended "there is no decisive evidence as yet" that rearward-facing seats would reduce fatalities in air crashes.

■ **Lt. Gen. Thomas S. Power** (*see cut*), who has headed the Air Research and Development Command since May 1954, has been selected **to command the Strategic Air Command.** He will succeed **Gen. Curtis E. LeMay,** who becomes Air Force Vice Chief of Staff in August. Before his ARDC assignment, General Power had been **SAC's Vice Commander,** under General LeMay, for more than five years. During World War II, he served with heavy-bomber units in North Africa and the Pacific. At presstime, General Power's successor at the Air Research and Development Command headquarters in Baltimore had not been announced.

General Power

■ In another shift of top Air Force personnel, **Lt. Gen. Frank F. Everest,** Deputy Chief of Staff for Operations, was reported to be named to succeed **Lt. Gen. William H. Tunner** as Commander of **US Air Force, Europe.** General Tunner has been mentioned as a possible successor to **Lt. Gen. Joseph Smith** as Commander of the **Military Air Transport Service.** The "musical chairs" among top commanders will inevitably lead to many more shifts, unannounced at press time.

■ STAFF CHANGES. . . . **Maj. Gen. Edward H. Underhill,** Vice Commander, Air Training Command, has been reassigned as Commander of the Eastern Air Defense Force, ADC. . . . **Brig. Gen. Donald D. Flickinger,** Commander, European Office of ARDC, will return to Hq., ARDC, Baltimore, July 15, to become Staff Surgeon and Director of Human Factors. . . . **Brig. Gen. Harry C. Porter,** Commander, 3079th Aviation Depot Wing, AMC, will become the Junior US Resident Member and Chief of Staff, United Nations Military Armistice Commission, Hq., Pacific AF, on July 1. . . . **Brig. Gen. Lawson S. Moseley,** Chief of War Plans Division, DSC/Operations, Hq., USAF, will be reassigned to Hq., Pacific AF, the latter part of July for duty as Assistant Chief of Staff, Plans. . . . **Gen. Laurence S. Kuter,** Commander of FEAF, will be relieved from his assignment July 1 to become Commander-in-Chief of the Pacific AF. . . . **Brig. Gen. Clyde H. Mitchell,** Deputy Director for Production, Hq., AMC, will replace **Brig. Gen. Alfred R. Maxwell** as Commander of the Rome AF Depot, N. Y., August 1. General Maxwell has retired. . . . **Brig. Gen. James B. Knapp,** Commander 6606th AB Wing, Hq., NEAC, will move to Hq., SAC, for duty as Director of Installations Engineering, July 1. . . . **Maj. Gen. Hunter Harris, Jr.,** Deputy for Operations, Hq., FEAF, will be assigned to Hq., Pacific AF, for duty with the Pacific Command as Deputy Chief of Staff for Plans and Operations, July 1. . . . **Brig. Gen. Lawrence M. Guyer,** Special Assistant to the Commander, Hq., FEAF, will become Chief of Staff, Fifth AF, July 1. . . . **Brig. Gen. C. Pratt Brown** retired April 30. . . . **Maj. Gen. Frederick R. Dent, Jr.,** formerly Commander of the Mobile Air Materiel Area, Ala., retired May 10. . . . **Brig. Gen. Harley S. Jones** retired May 31 from duty as Deputy Director, Procurement and Production, Hq., AMC.—END

With crane and bosun chair, workmen wash and wax 38-foot high tail of prop-jet C-130 Hercules transport

THE LOCKHEED C-130 HERCULES IS THE ONLY COMBAT CARGO TRANSPORT IN USAF SERVICE THAT CAN PARADROP 20-TON LOADS AT THE TOUCH OF A PUSH-BUTTON. THIS NEW PROP-JET "STRONG-MAN" OF THE AIR IS BUILT BY LOCKHEED'S GEORGIA DIVISION.

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DOLLAR ENGINEERING—Advanced aerial weapons bearing the Northrop name are developed to achieve maximum economy through ease of production, maintenance, and operation. A notable example is the new supersonic trainer now being developed by Northrop for the U. S. Air Force. Light in weight and low in cost, this airplane embodies a basic concept which can result in a whole new family of effective aerial weapons, all linked by the same principle of simple and economical design. Since national defense dollars and national manpower are in short supply Northrop will continue to introduce the dollar into the engineering equations; will continue to employ "dollar engineering" in using the best science and technology to create the *low-cost* solution to a national defense problem and produce more Air Force per dollar of national defense budget.

NORTHRO

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Pioneers in All Weather and Pilotless F

airman's bookshelf

Last month space ran out on our listing of aircraft reference books. Here are several more. Three "musts" for the aviation writer's desk, libraries, and editorial offices are oversize reference types published by Hanover House. *The Aircraft of the World,* by William Green and Gerald Pollinger ($7.95), is a comprehensive and authoritative book containing 1,200 photos and silhouettes of today's aircraft with a few exceptions because of military security. Each photo is captioned with aircraft origin, nationality, evolution, dimensions, and operational data. *Jet Aircraft of the World,* by William Green and Roy Cross ($6.95), gives a similar breakdown on all currently operating jet, turbojet, and turboprop aircraft. It contains 600 photos in addition to a detailed narrative history of jet propulsion, design, and manufacture from the beginnings in the 1930s to 1954. The jets—supersonic research, combat, and commercial—appear in chronological series, showing step-by-step evolution. Data on development, specifications, performance, and armament completes this picture. Thirty of the most important jets appear in full-page, four-view, tone drawings.

England's top World War II fighter pilot, Group Capt. J. E. "Johnnie" Johnson ranks *Famous Fighters of the Second World War,* by William Green ($3.95), "high amongst the best . . ." And we certainly agree. It's a book all airmen who ever tangled with either the Germans or Japanese will want to read. For in this one Green describes in considerable detail the development and operational history of eighteen of the top fighters used during World War II. America is represented by the P-38, P-40, P-47, and the P-51; Germany with the ME-109, ME-110, ME-163, ME-262, and the FW-190; Japan with the Mitsubishi Zero, the Kawasaki Tony, and the Kawanishi George; and England with the Hawker Hurricane, Supermarine Spitfire, Bristol Beaufighter, de Havilland Mosquito, and the Hawker Typhoon and Tempest. Multiple photos of each type aircraft, in the air and on the ground, along with profile line drawings, give a pictorial record of each production model development. Each aircraft type is also given a full-page, three-view, toned, scaled drawing—a valuable feature for model builders.

* * *

Four recent books for air-minded youngsters, ages eleven to eighteen, provide informative, absorbing reading. Two fiction works will especially appeal to teenagers. The best is *Jets Away,* by Rutherford Montgomery (Dodd, Mead, $3). This is a story of adventure in the Strategic Air Command, featuring two high school buddies who volunteer for AF service. After their basic training at Lackland, they move to tech training at Amarillo AFB. Then both go to SAC at March AFB. Brick Miller plans a one-time hitch while Henry Doby is in for a career. At March they are separated for the first time. Henry becomes a "Clancy"—a boom operator—on a KC-97 refueling aircraft. Brick, a B-47 mechanic, earns sergeant's stripes and becomes crew chief on his own airplane. An exciting plot unfolds in a series of operational training flights. And it is during a realistic combat mission across the Pacific that Brick finally recognizes the vital importance of his job, decides to make it a career, too. Mr. Montgomery, a former flyer and nationally recognized author of some sixty books for the young set, spent months living and flying with the men of SAC to give this colorful novel a background of authenticity. Another of his books, *Beaver Water,* won the Spring Book Festival Award last year, and he is now busy on a series of Air Force adventure books for the young crowd.

High Challenge, by D. S. Halacy, Jr. (Macmillan Company, $2.75), is the story of a young lad's fight to overcome a physical disability so that he can learn to fly and become an airline pilot. When he fails to win a commercial pilot's license, he turns to sailplane flying and it is here that he finds real satisfaction. On one occasion he gets caught in the Sierra Wave and is suddenly lifted to 40,000 feet. The vivid description of this ascent and his fight to get the glider back to earth, while at the same time saving the life of a buddy, provides exciting reading.

Two non-fiction books might well become part of every child's library. *Great Moments in Flying,* by John W. R. Taylor (Roy Publishers, $2.50), presents twelve stories of airmen of various nations whose accomplishments are landmarks in the history of aviation. Taylor starts with the birth of flight—the story of Wilbur and Orville Wright—and then selects such other American air pioneers as Jack Knight of air mail fame, Lindbergh, and AF Lt. Col. Chuck Yeager and his historic first flight through the sound barrier. To these he adds such events as Bleriot's English Channel crossing, Alcock and Brown's first transatlantic flight, and Admiral Byrd's flight across the South Pole. Professional airmen are bound to disagree with such a limited selection as Taylor makes. But even so these historic events should become a part of every child's knowledge.

Wings Over the Atlantic, by Robert J. Hoare (Charles T. Branford, $3), tells the stories of the airmen and women who blazed the air trails across the North Atlantic. In the early days of flight these hazardous 2,000 miles provided a challenge to all flyers. Alcock and Brown made the first direct flight, followed by Lindbergh, Amelia Earhart, Sir Charles Kingsford Smith, Jim and Amy Mollison and many others—solo or team. Some ended in tragedy, others in success. But all paved the way for today's routine transatlantic passenger air service. This book tells the thrilling stories of the early flights, the long preparations for them, and the obstacles pilots faced. The story concludes with current Atlantic speed record flights and looks toward jet passenger service of the future. An informative, educational, and interesting air history.

WITH THE PAPER-BACKS

All the paper-back publishers are eyeing the successful air book publishing program now being conducted by Ballantine Books, Inc. Ballantine's first inkling of the popularity of paper-back air books came in April 1955, when two printings were needed for Paul Brickhill's *The Dam Busters* (35¢)—a story of how RAF Squadron 617 breached the Eder and Moehne dams during World War II. Six months later several hundred thousand copies of Frank Harvey's *Jet* (35¢)—a collection of AF short stories—quickly moved off the racks. With this surprising indication of public interest, Ballantine geared up for a program of air book publishing. In March, April, and May 1956 Ballantine air books included *Beyond Courage,* by Clay Blair, Jr. (35¢), *The Wright Brothers,* by Fred C. Kelly (35¢), and *God Is My Copilot,* by Brig. Gen. Robert L. Scott (35¢). All four were outstanding popular selections of the Teen Age Book Club and enjoyed an unusually fine sale on the newsstands. Best seller of the lot is General Scott's

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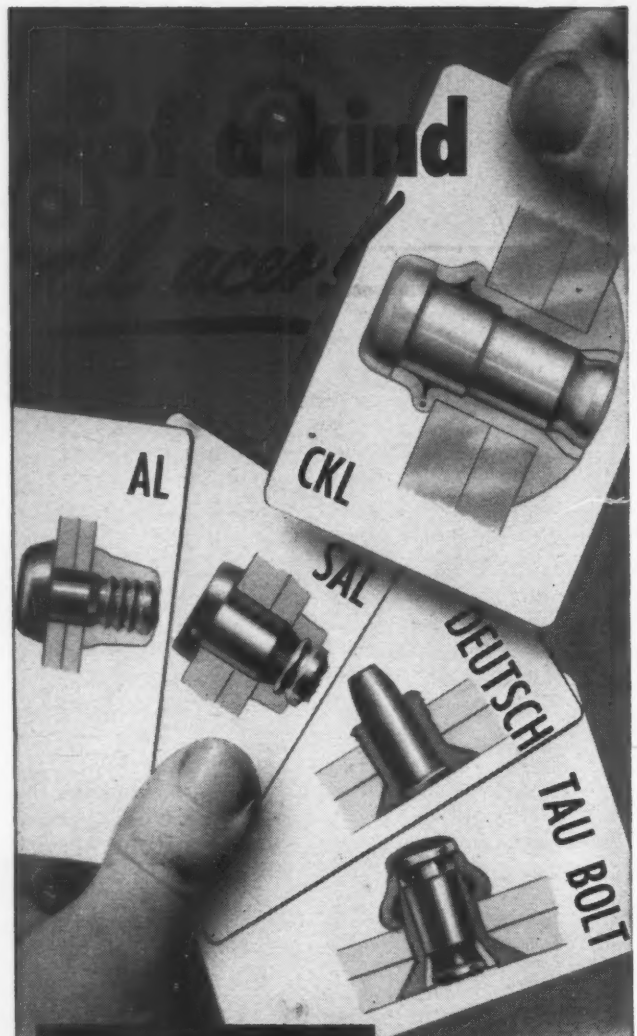

HUCK AIRCRAFT FASTENERS give you:

- Greater shear-strength to weight ratio
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- Positive mechanical lock.
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THE AIRMAN'S BOOKSHELF—CONTINUED

God Is My Copilot, with a total paper-back sale to date of 360,625 copies—selling as fast in reprint now as it did when originally published. One original air fiction in the program, *Turn the Tigers Loose,* by AF Lt. Col. Walt Lasly (35¢)—a story of night intruder flying in Korea—has sold 120,000 copies since its publication date in November 1956.

Already this year Ballantine has had three more "hits"—surprising in that all three are long, rather technical, serious air books. March publications, *The First and the Last,* by Adolf Galland (50¢)—the story of the rise and fall of the German Luftwaffe, and *Wing Leader,* by Group Capt. J. E. "Johnnie" Johnson, RAF (50¢)—the personal narrative of England's top air ace in World War II—have each sold over 350,000 copies and the half-million mark is expected by early summer. Ballantine's April air book, *Zero,* by Martin Caidin (50¢)—a history of the Pacific air war as told by two former Japanese air officers—sold out the first printing (150,000 copies) before publication. The next Ballantine air book, coming in July, is Best Stile's World War II classic *Serenade to a Big Bird.*

The tremendous interest which Ballantine paper-back air books have received demonstrates a public interest in airpower and an encouraging trend in literary habits among book readers of all ages.

While Ballantine has forged ahead in this field, other soft-cover publishers are not idly standing by.

In February 1955 Popular Library issued *Boldness Be My Friend,* by Richard Pape with a foreword by RAF Marshal Lord Tedder (25¢)—the true incredible story of an RAF navigator shot down over Europe, captured, and escaped. It was followed in September 1956 with *Four Winds,* by David Beaty (35¢)—a novel about an airline pilot; last month, in cooperation with the USAF Book Program, Popular Library published *Roll Back the Sky,* by AF Lt. Col. Ward Taylor (50¢)—a novel about the B-29 firebomb missions against Japan during World War II. Popular Library is planning a special Air Force paper-back publishing program.

Ace Books recently entered the air publishing field with Ed Ruppelt's *A Report on Unidentified Flying Objects* (35¢), and Brig. Gen. Robert L. Scott's *Look of the Eagle,* a novel about an AF jet pilot.

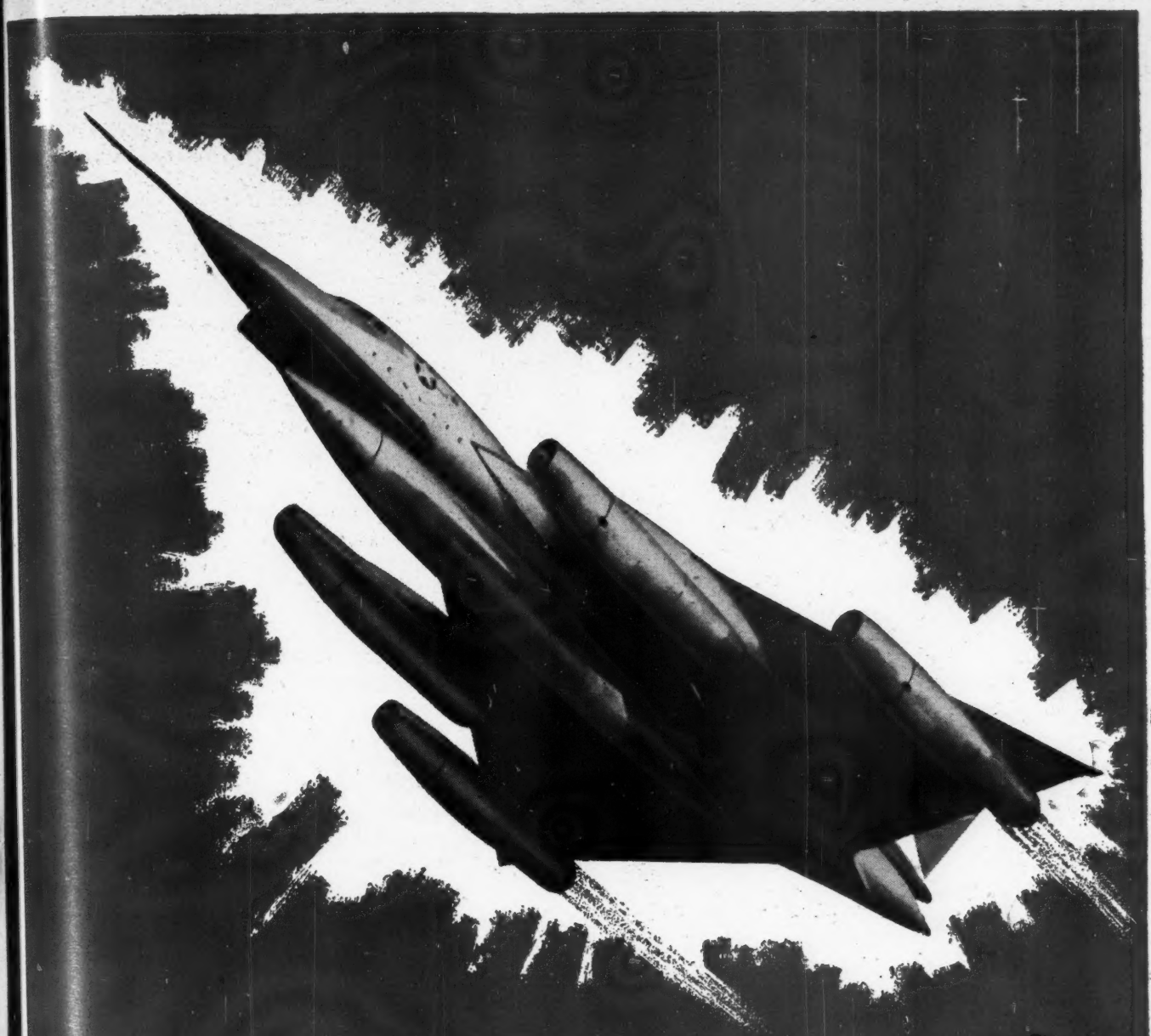
Signet Books has issued three—the great air classic *Night Flight,* by Antoine de St. Exupery (25¢), *General Billy Mitchell: Champion of Air Defense,* by Roger Burlingame (35¢), and *The Navigator,* by Jules Roy (25¢), a novel about an RAF crewman.

Dell Books has come out with three: *Down,* by Walt Grove (35¢), a novel about an AF Sabrejet pilot in the Arctic; and two by Anne Lindbergh, *Listen! The Wind* and *The Steep Ascent.* Two more are in production and several under plan.

Bantam Books has made a good beginning with two air fiction titles, *View from the Air,* by Hugh Fosbrugh (35¢), centers around B-24 air strikes against the big Japanese base at Truk in the Pacific, and *Forbidden Area* (35¢), by Pat Frank, makes up a cliff-hanger story of a Russian attack on the US.

Pocketbooks is considering a reissue of two classics now out of print, *Command Decision,* by William W. Haines, and *Guard of Honor,* by James G. Cozzens.

Both Bantam and Pocketbooks, two giants in the paper-back industry, are studying plans for a series of air titles, and it is hoped will soon join the other pocket publishers in the AF Book Program's efforts to make the story of the air available to the widest possible audience of military and civilian readers.—END



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What's New With ★ RED AIRPOWER

Here's a summary of the latest available information on Soviet air intelligence. Because of the nature of this material, we are not able to disclose our sources, nor to document the information beyond the fact that the sources are trustworthy.

There are recurrent but unconfirmed reports that the Soviets have set up a separate administration within their Ministry of Defense for guided missiles, much as there are separate administrations for armored forces, for artillery, and tactical air forces.

If such be the case, this would imply that the USSR has made missile units fully operational. It also means that they see missiles as weapons somewhat separate and apart from other weapons, and for this reason have chosen to give them a separate command structure.

* * *

Here's the metallic composition of turbine blades from one of Russia's latest turbojet engines. The blades are all nickel, except for the following: chromium, fourteen to eighteen percent; tungsten, five to six percent; molybdenum, between three and four percent; titanium and aluminum, about two percent each; iron, eight percent. Vanadium was 0.3 percent and carbon ran between 0.11 and 0.16 percent. Silicon and/or manganese were held to about half of one percent.

* * *

The Engineering Patent Library in Moscow recently was enlarged. Thanks to a new arrangement with the British, it includes all of the published patents of Great Britain. The Russian library also boasts that it has a complete collection of German patents as well, and that it covers numerous patents from other countries.

* * *

The seventeenth annual Moscow indoor aircraft models championship recently was held at the Dynamo Stadium. Indoor models made of specially prepared and compressed straw were flown, among others. Few of the models weighed as much as an ounce with many in the half-ounce class. Power was provided by the inevitable rubber band. First prize went to a model that flew four minutes, forty-four seconds.

Through such model contests, as part of school activities, early interest is stimulated in aviation in the USSR. Nine- to fourteen-year-old students take part in the model-building contests, of which there are many classes and types which assures the broadest possible basis for interest and competition.

When ready to graduate from building and flying models, Russia's youth can pursue an interest in aviation through DOSAAF, the Public Society for Cooperation with the Armed Forces. It has a broad network of clubs, special training schools, courses and study groups, and sports teams in many cities of the USSR, even down to such small administrative units as Machine Tractor Stations, where equipment is kept for use on the collective farms. DOSAAF gives glider and pilot training, elementary military training, and trade school courses for mechanics and others interested in technology.

* * *

Incidentally, DOSAAF also is responsible for civil defense in the USSR—and this, too, extends down to Machine Tractor Stations and to protection of the animals on collective farms. However, civil defense administrative responsibility is in the hands of the Ministry of the Interior, which also includes many elements of the secret police.

The Russians are now being instructed in the best measures to take in the event of an air raid to offset nuclear explosions and chemical warfare. As in Western Europe, civil defense has come slowly in the USSR.

* * *

Recent reports from the USSR indicate that the Ministry of Aircraft Production, which has charge of series production of aircraft, engines, and components, has its own Research Institute. The Institute puts its effort into studying new ways to improve production techniques.

Not long ago it came up with a new electronic modulator for spot welding machines that reduces the harmful effect of spot welding, which causes cracks to develop at the point of the weld.

The new modulator attachment reduces this to a large degree, and it has been used in connection with spot welding of duraluminum, steel, and chrome-nickel-moly alloy sheets.

* * *

A new name among Russian designers appeared last year in connection with the Soviet display on their Aviation Day. It was Pavel Sukhoi, who was credited with the delta-type hypersonic aircraft that flew by at Tushino Airport.

But inspection of Soviet records shows that Sukhoi's name first appeared in the late 1920s when he was teamed with the dean of Soviet designers, Andrei Tupolev, to produce one of the USSR's single-engine fighters, the I-4, which flew at 120 mph, and was equipped with two or three machine guns. Where he has been since is not known.

* * *

Russians officially report that they have flown rockets with dogs on board since 1951, and that as yet no dog has perished. Similar flights have been made in the US using mice and monkeys, in an effort to find the effect of high-altitude flight upon living creatures.

* * *

One reason for Russian interest in what they call the "high latitudes," which means the polar ice cap, is that they have found that normal radio communications frequently black out in that region for several hours at a time because of the aurora borealis or northern lights. Some black outs of radio communications have lasted almost two days. The Soviets have been studying ways of predicting the phenomenon and overcoming it to insure constant communication with aircraft that they might have to operate in the area.

* * *

In March we reported in this column that Russia's Chief Marshal of Aviation, Pavel Zhigarev, had authored a short publication titled "Thoughts on Air Strategy."

So far no one has come up with a copy of the publication. It is quite possible that it may have been a false report which since has been picked up by several European publications, and some in the US.—END

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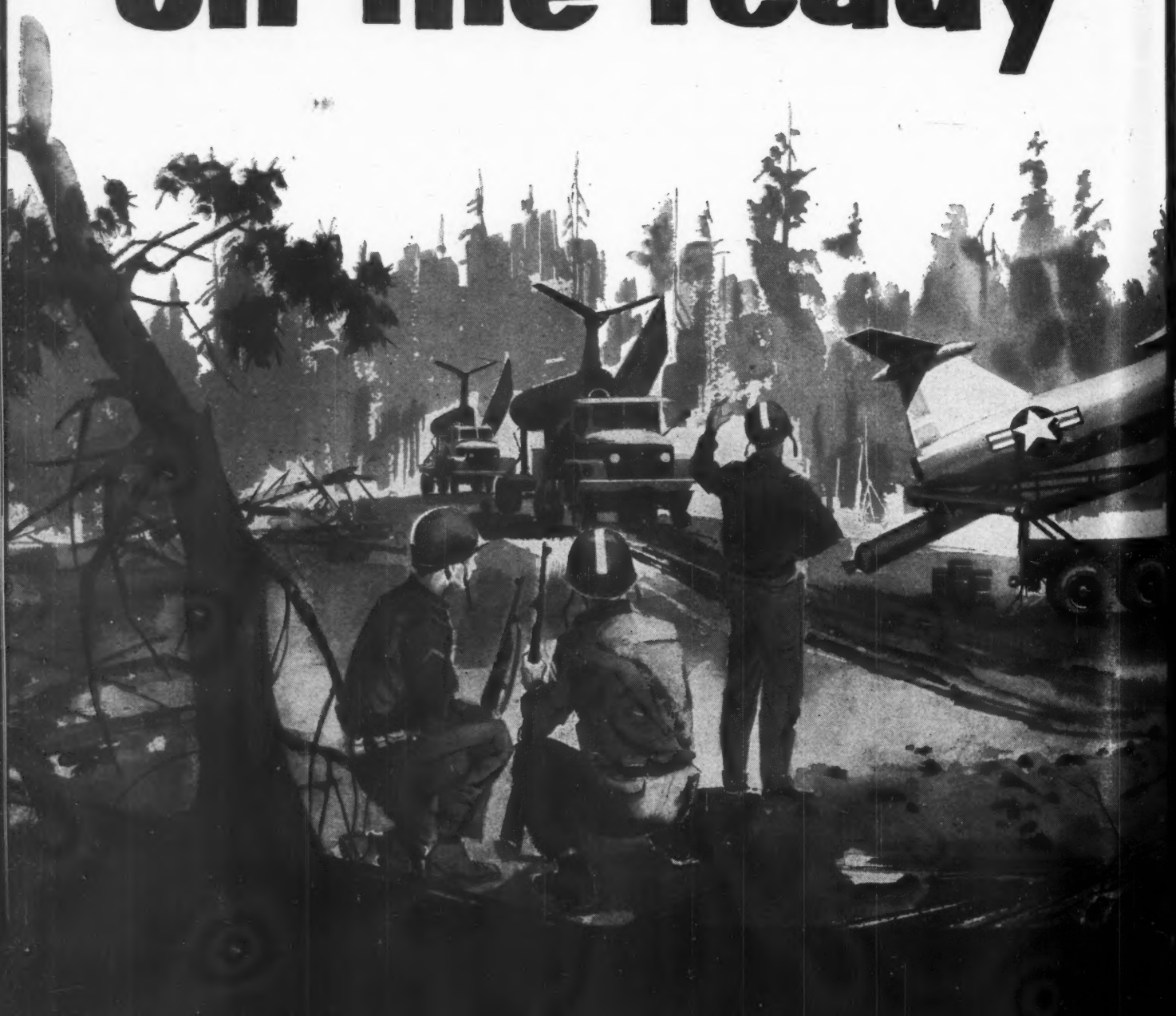

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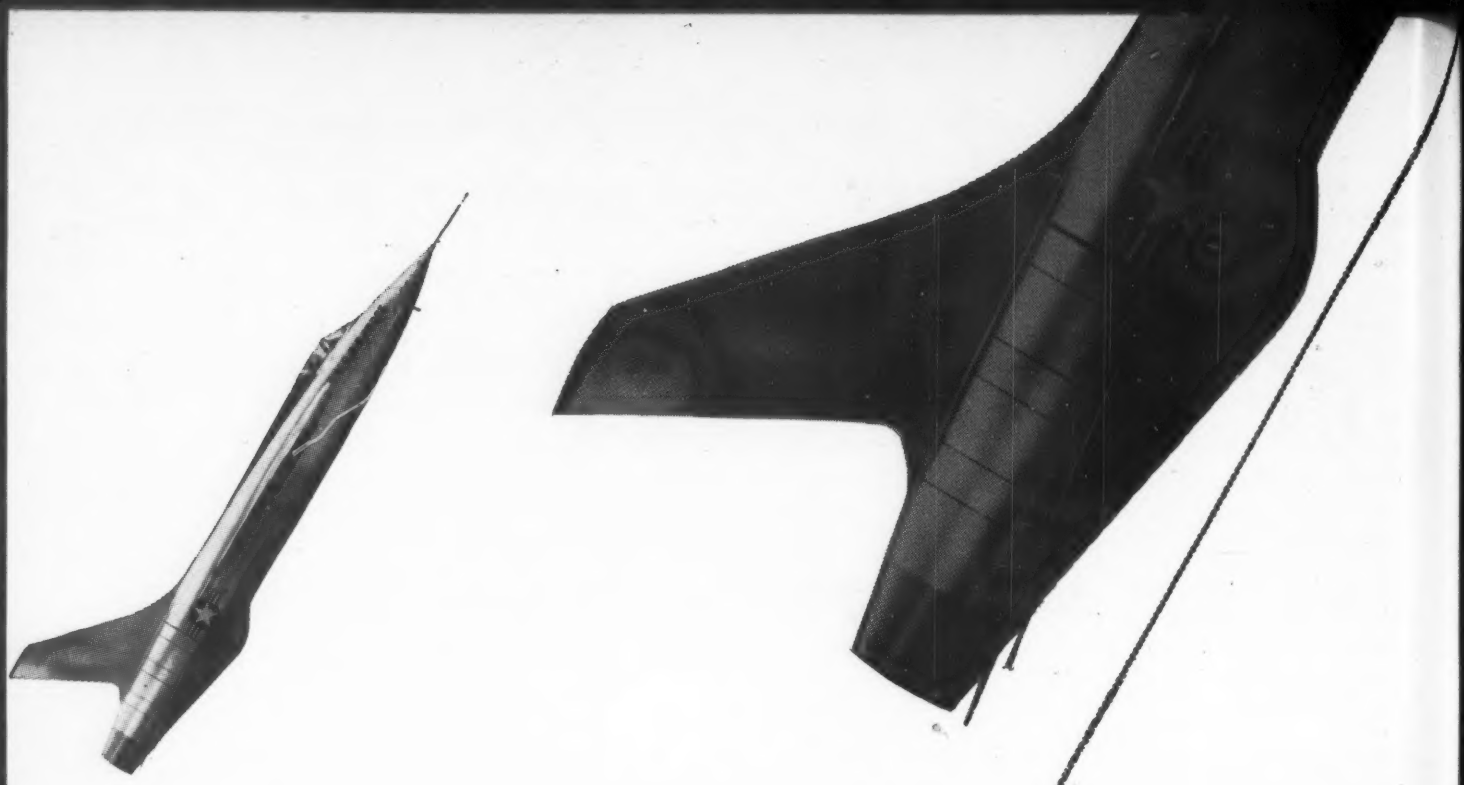

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Editorials

★ Cordiner Committee Legislation To Get Congressional Examination

TWO MONTHS ago, in our April issue, we touted with high hopes the legislation based on the Cordiner Committee report. At the time it appeared that our optimism was well-founded since the legislation had the solid backing of the members of the Committee, the Secretaries of the three services, the members of the Joint Chiefs of Staff, the Secretary of Defense, and, so it appeared at the time, the Administration. We predicted at that time that the legislation would sail through the Bureau of the Budget and be passed by the Congress in time for implementation to begin by January 1, 1958.

At this writing we were at least half-wrong. The Cordiner legislation did not sail through the Bureau of the Budget. It has not received the enthusiastic backing of the Administration. However, it has been rescued from the backwaters of bureaucracy and, fortunately, as a result of bipartisan Senatorial initiative, Congress will have a chance to examine it in the current session.

When Mr. Wilson originally transmitted the Cordiner Committee legislation to the Bureau of the Budget he accompanied it with about as strong a letter as a Cabinet member could possibly write in support of legislation. Here are the pertinent parts of that letter, in the light of which subsequent actions of the Bureau of the Budget and Mr. Wilson must be viewed to bring the Cordiner matter into focus:

"The need for effecting a fundamental modernization of the present pay structure of the Armed Forces is an urgent one which requires Congressional examination and action at the earliest possible date. It is for this reason that I request clearance of this proposed legislation as soon as possible.

"The legislation is based on recommendations to me of the Defense Advisory Committee on Professional and Technical Compensation. [Cordiner Committee.] Previously in a letter to the President of July 14, 1956, submitting the Department's legislative program for 1957, I stated the probability that from the work of the Committee some legislative proposals would result which we would desire to include in our program.

"I would emphasize that the proposed legislation is an essential part of an integrated program contemplated by the Department of Defense to achieve and maintain the necessary quality, experience level, and optimum balance by skills of personnel in the Armed Forces. Included in this program is the establishment of a system for proficiency pay equivalent to one or two pay grade advancements to enlisted men who can qualify therefor by demonstrated high quality performance of duty. The proficiency pay system can be established under existing law. However, successful and equitable operation thereof is not possible unless there is first established the proper number of enlisted pay grades and pay differentials between grades as provided in the proposed legislation. Likewise, an essential part of the contemplated program which is contained in the proposed legislation is to provide additional incentive for selected Reserve officers to remain on active duty beyond the period of obligated service to meet the requirements of the military services. . . .

"I believe that the proposals advocated by the Committee and upon which the proposed legislation is based are founded solidly in fact and can stand up under the most critical form of analysis in the Congress. I believe that if this legislation is enacted it will result in a significant improvement in the retention rates, quality, and desired balance by skills of personnel of the Armed Forces, and thus contribute to the defense of the Nation. . . .

"I feel that the cost of the proposed legislation is moderate compared to the ultimate costs which may be incurred, apart from decreased operational effectiveness if we do not now provide means for attracting and retaining in the Armed Forces the best qualified men in the many and diverse skills required.

"The Department will request that the effective date of the legislation be January 1, 1958. I wish to stress that if this date is approved, no additional appropriation to cover costs of this legislation for Fiscal Year 1958 will be requested by the Department of Defense. The costs thereof will be fully absorbed by the military departments within the limitations of the Defense budget already submitted to Congress.

"This revised proposal has been worked out carefully in light of my recent discussions and communications with the President. It has been reviewed in detail by the Secretaries of the Military Departments, the Chairmen of the Joint Chiefs of Staff, the Chiefs of Staff of the Army and Air Force, the Chief of Naval Operations and the Commandant of the Marine Corps. It is our unanimous opinion that this proposal is an essential step toward improving our balance of personnel skills and experience in the Armed Forces, and that it will contribute directly to the defense of the Nation."

(Continued on following page)

In reply to this urgent message from the Secretary of Defense, the Director of the Bureau of the Budget, Mr. Percival Brundage, on April 4 wrote as follows:

"Your letter of March 20, 1957, transmitted a draft of proposed legislation to modernize the pay structure for the uniformed services based on recommendations from the Defense Advisory Committee on Professional and Technical Compensation.

"In my judgment, the President has made clear his view that only a portion of the recommendations of the Cordiner Committee with respect to the pay structure should be considered for adoption at this time. He has indicated that pay adjustments should be limited to those directly affecting the retention of the hard-to-train skilled personnel who have been leaving the services at an undesirable rate.

"It would appear that the key point for retention of enlisted personnel with critical skills is at the expiration of the first enlistment. Therefore, it would seem that adjustments should be focused particularly at that point or that provisions for special compensation for selected persons thereafter might be appropriate. Similarly, the expiration of the period of obligated service would appear to be the point at which adjustments for officers ought to be focused. In addition, various administrative actions, as recommended by the Cordiner Committee, will contribute to improvements in controlled personnel retention, since pay adjustments are not the sole approach to solution of this important problem.

"Proposals for general adjustments in levels of compensation for the members of the uniformed services must be weighed against the importance at this time of avoiding any additional inflationary pressures. Accordingly, it is requested that your draft of proposed legislation be reviewed and resubmitted with the adjustments limited to the areas outlined above. Members of the staff of the Bureau of the Budget are available to meet with representatives of the Department to assist in any possible manner in bringing the Department's proposal into accord with the President's wishes."

This letter slammed the door, as far as Administration-sponsored legislation was concerned, on any kind of a comprehensive program to implement the Cordiner Committee proposals. But the Air Force Association felt that the proposed legislation was of such over-riding importance that it should not be allowed to die without the scrutiny which Mr. Wilson felt the proposal warranted and could withstand. On April 26, therefore, the Association issued the following press release:

"The Administration has officially rejected the Cordiner Committee's program to modernize the pay and manpower structure of all the armed services, the Air Force Association charged today.

"In a statement issued today, AFA President John P. Henebry said, 'It can now be reported that the Bureau of the Budget, acting in behalf of the White House, has turned back as unsatisfactory the Defense Department's draft of legislation designed to put the Cordiner proposals into operation.

" 'This action was taken,' Mr. Henebry said, 'in the face of assurances by Secretary Wilson that the proposed legislation would require no increase in the defense budget already submitted to Congress. Further, the proposed legislation was rejected with the knowledge that it represented the unanimous opinion of the Secretary of Defense, the Secretaries of the three military departments, and the Joint Chiefs of Staff, as an essential contribution to the nation's defense.'

"The Association president said that, instead of accepting these opinions and those of the Cordiner Committee, the Bureau of the Budget has placed sharply defined limitations on any adjustments in the military pay structure and has requested the Defense Department to submit new legislation based on these limitations.

"The Cordiner Committee, named for its chairman, was appointed a year ago by Secretary Wilson to examine the military system of compensating officer and enlisted technicians and the remuneration presently authorized for scientific, professional and technical management.

"Mr. Henebry said the only reason advanced by the Bureau of the Budget for limiting Cordiner-type pay adjustments was an avowed fear of an inflationary effect. This fear of inflation, said the AFA president, would seem to be based on lack of information as to the effect of the Cordiner proposals and he quoted from a statement by Ralph J. Cordiner, president of General Electric and the committee's chairman, made on March 26. At this time, Mr. Cordiner said: 'Because of inadequate information, many people have been led to believe that the Committee's recommendations are nothing more than a general pay-raise for military personnel, adding still more to the oppressive costs of national defense and to the current forces of inflation. Nothing could be farther from the truth. Our recommendation contemplates savings and deflationary influence.'

"In the same statement, the AFA president pointed out, Mr. Cordiner said: 'It is the opinion of this Committee, based on both industrial experience and on studies prepared for the Department of Defense, that savings and gains up to $5 billion a year can be achieved within five years or less. The same measures which can produce these savings for taxpayers could also increase the combat effectiveness of the armed forces by about fifteen percent at present costs.'

"Mr. Henebry said it was hard to see how savings of $5 billion annually could be termed inflationary.

"He charged that pressure from the Bureau of the Budget had led the Department of Defense to abandon the Cordiner program, and consider only legislation based on relatively minor pay adjustments in certain critical skills.

" 'If these conditions hold,' Mr. Henebry said, 'any legislative proposal re-emerging from the Pentagon will be little more than a glorified reenlistment bonus—more patchwork on the shaky military pay structure. Such an approach is in direct contradition to the Cordiner Committee findings. In fact, Mr. Cordiner himself has said that his Committee warned the Secretary of Defense that it could not content itself with simply applying a few patches to an antiquated structure of military compensation which has been inflated but not substantially changed since it was adopted from the British Navy in the year 1812.'

" 'Despite this clear-cut warning from Mr. Cordiner and his Committee, the piecemeal approach is being attempted,' Mr. Henebry said. 'And even worse is the prospect that this patchwork legislation will be advanced as representing portions of the Cordiner proposals.'

"The Air Force Association felt a responsibility in calling public attention to the shelving of the Cordiner recommendations, said Mr. Henebry, because in the April issue of the Association's magazine, AIR FORCE, it was predicted that the Cordiner legislation would sail quickly through the Bureau of the Budget and be enacted into law soon enough to be put into effect by January 1, 1958.

" 'At the time, our magazine staff had every reason to believe that such was the case,' Mr. Henebry said.

"When the Defense Department submitted the legislative proposal to the Bureau of the Budget, Mr. Henebry

(Continued on page 34)

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said, Secretary Wilson pointed out that in his opinion it could stand up under searching Congressional analysis.

" 'It seems a shame,' the AFA president concluded, 'that Congress will not get a chance to give the Cordiner proposals the benefit of such analysis.' "

The resultant stories in the press stimulated constructive action. On May 8 Sen. Stuart Symington (D., Mo.), acting for himself, and Sen. Barry Goldwater (R., Ariz.) introduced a bill in the Senate known as S.2014 and called, in legislative terminology, "A Bill to change the method of computing basic pay for members of the uniformed services, to provide term retention contracts for Reserve officers, and for other purposes." It is designed to implement the Cordiner Committee recommendations. It was referred immediately to the Committee on Armed Services.

Ironically, on the same day the Symington-Goldwater bill was introduced, the Cordiner Committee report was officially presented to Secretary Wilson by Mr. Cordiner. In submitting the report the Committee forwarded a letter of transmittal, the highlights of which were as follows:

"The Committee Report presents an integrated program, which, through modern management of the manpower in the armed services, can simultaneously reduce the cost and increase the effectiveness of the national defense. Adoption of this program in its entirety will, in our judgment, make it possible to attract, retain and motivate the scientific, professional, technical, combat leadership and management skills required by the Department of Defense today and in the future. It is believed the improvements will be far reaching and long lasting, and will bring in greater savings and gains with each passing year as the new systems are instituted. Such benefits cannot be achieved by half-measures which adopt the terminology but kill the substance of the recommendations.

"In brief, the suggested program proposes:

"1. A modern compensation plan to pay people what their services are actually worth, instead of paying people on the basis of longevity of service, and in this way encourage and reward outstanding performance, advanced skills, and military careers for high quality personnel.

"2. A manpower management plan to provide a means for proper and effective administration of the pay plan. This manpower management plan is designed to give the Department of Defense greater flexibility and control over the distribution of skills and experience in the services and places emphasis on quality rather than quantity.

"The six major results that can be achieved by means of the Committee's proposals, Mr. Secretary, are:

"1. About a fifteen percent improvement in the combat capabilities of the United States Armed Forces, without a significant change in the budget. Or. . . .

"2. Savings and gains up to $5 billion a year by 1962—or sooner—in the cost of national defense.

"3. Sharp reductions in training accidents now, and in military and civilian losses in the event of war.

"4. Reduction in the number of military personnel required to produce a given level of national security.

"5. A long-term solution to the basic manpower problems of the Armed Services.

"6. Improved attraction, retention and motivation of the professional and technical civilian personnel in the Department of Defense. . . .

"There is no automatic solution to Department of Defense manpower and compensation problems. The Committee believes that the instruments and approaches being recommended in this Report will make effective solutions possible. We urge that the Report receive the earnest consideration of the Congress and the Administration because it represents an important opportunity to improve the defense capabilities of the Nation and at the same time reduce the cost of defense, the largest single item in the federal budget. . . ."

Also on this same date, May 8, Mr. Wilson announced the Defense Department's counter-proposal, based on Bureau of the Budget recommendations. These were:

1. Pay increases of from $12 to $50 per month for 360,000 enlisted technicians in scarce skill categories. This could be done without legislation, through administrative action only, Mr. Wilson said.

2. A system of bonuses for Reserve officers calculated to induce them to extend their periods of active duty beyond their obligated tours. This, Mr. Wilson said, would be requested in legislation.

Note that, in the letter of transmittal accompanying the Cordiner Report, the Committee warned against "half-measures which adopt the terminology but kill the substance of the recommendations." Mr. Wilson himself, in transmitting these later recommendations to the Bureau of the Budget, had this to say:

"The major faults in the present system will not be corrected by these or other patchwork actions alone. And, in my opinion, until we bring our military compensation system up-to-date, we cannot expect to achieve the necessary improvement in quality and balance of personnel skills and experience."

And here the matter stands as we go to press. On the one hand, more patchwork on the antiquated military pay and personnel structure. On the other hand, a modern personnel system geared to the requirements of the thermonuclear age, with promise of vast savings in tax money, more efficient utilization of precious manpower and an eventual end to the draft.

Many voices have been raised in favor of the Cordiner proposals besides the persuasive one of the Chairman of the Committee. Last summer the Republican platform contained a plank backing "improved incentives that will make services career attractive and rewarding." The Democratic platform contained a similar plank. Editorial comment has been almost uniform in endorsement of the Cordiner findings.

Forbes magazine, a publication not particularly noted for inflationary leanings, says, "These proposals should help give us a better defense. They should also over the years save us money. On this basis, they are good defense, good management and good economy."

The New York Herald Tribune: "If we are to maintain an effective military establishment in the interests of our own national security . . . no time should be lost in transforming these recommendations into concrete legislation."

The Cleveland Plain Dealer: "In these days of high taxes, when every dollar counts, it is ridiculous to throw away $5 billion a year through false economies. Yet this is exactly what we're doing when we fail to make pay in the armed services attractive enough so that men will remain in the service after they have been trained."

The Boston Herald called the Bureau of the Budget action "extravagant economy."

It is indeed fortunate that the Congress will have an opportunity to consider Cordiner Committee legislation over the Budget Bureau's objection. The measure, S.2014, has attracted support from both sides of the aisle. Here, surely, is an opportunity for the sorely beset American taxpayer, acting through his chosen representatives, to exert his influence. It is seldom that one can save money and increase combat effectiveness at the same time. Let's hope for speedy action on Capitol Hill.—END

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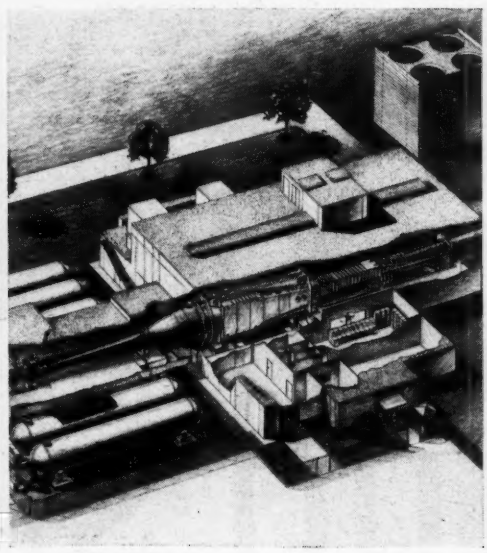

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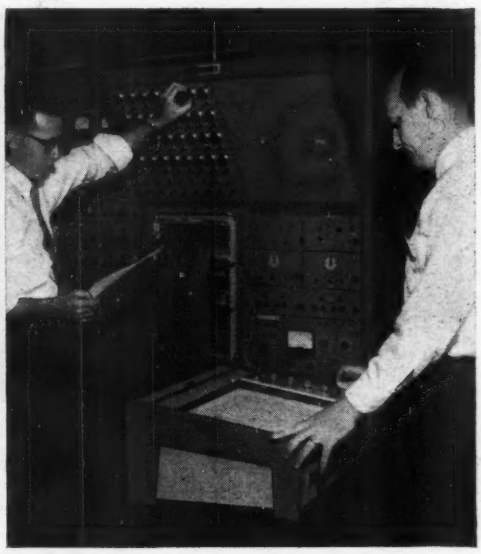

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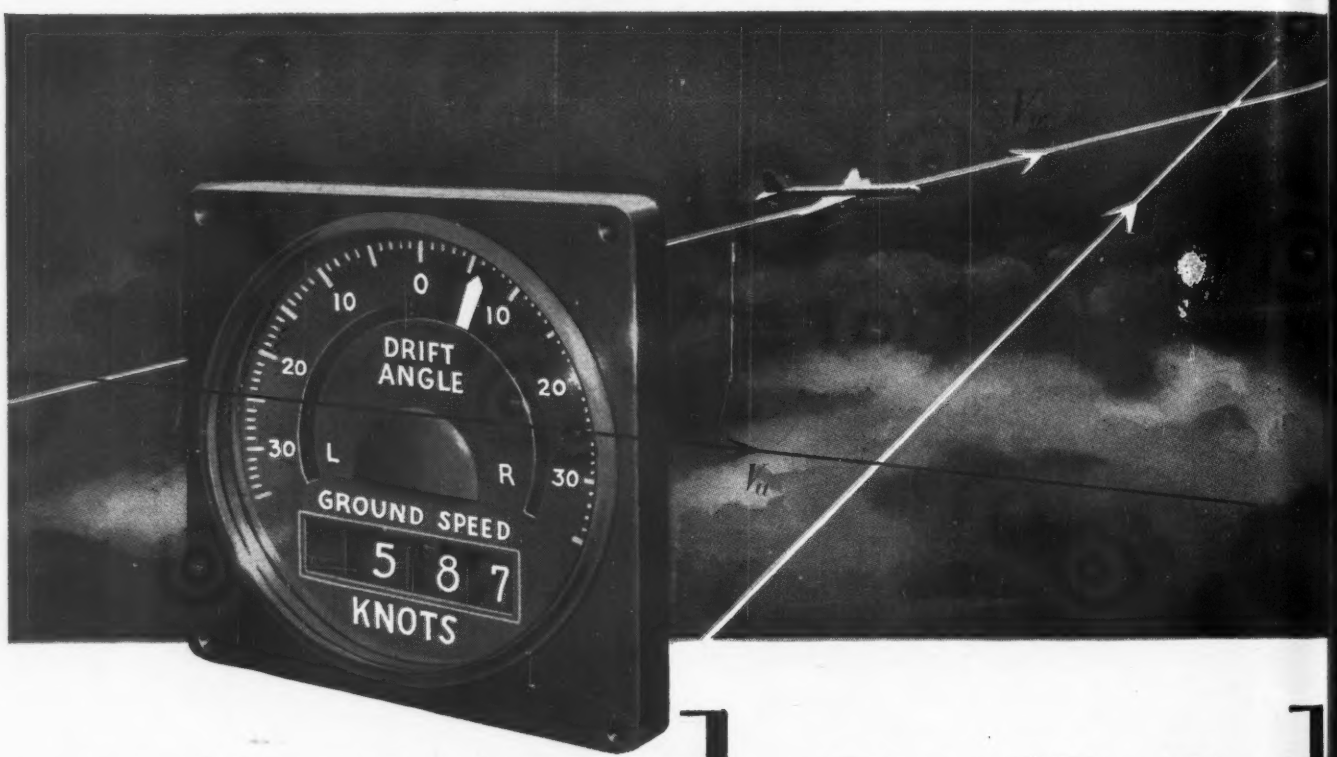

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SHOOTING THE BREEZE

WITH THE EDITORS OF AIR FORCE MAGAZINE

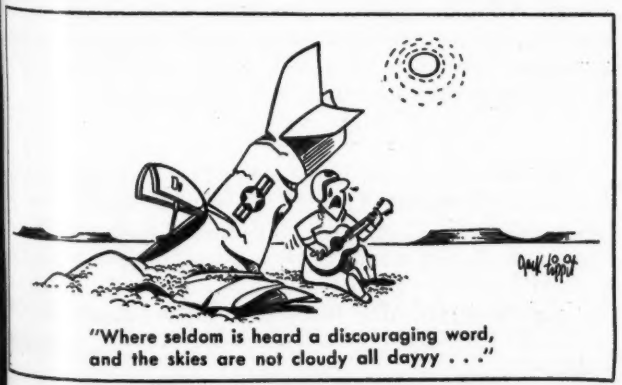
Al Harting, whose story of the Dallas tornado appeared in last month's issue, sends along the following poem, evidently war surplus property from what us aging types like to call "The Big War." There were several stanzas but space does not permit publication of all:

Byron, Shelley and Keats
Ran a dozen dead heats
Describing the view from the hills,
Of the valleys in May
When the winds gently sway
An army of bright daffodils.
Take daffodils, Byron—
The wild flowers, Shelley—
Yours is the myrtle, friend Keats.
Just reserve me those cuties,
Those American beauties,
An escort of P-38s!

Sure, we're braver than hell;
On the ground all is swell.
In the air it's a different story.
We sweat out our track
Through fighters and flak
We are willing to split up the glory.
Well, they couldn't reject us,
So heaven protect us
And until all this shooting abates,
One other small item
Gives us courage to fight 'em—
An escort of P-38s!

☆

The manpower symposium of Sacramento's Capital City Squadron, held on March 2, won the unit our "AFA Squadron of the Month" award and furnished us with a fine article for last month's issue ("More Mileage From Our Engineers," by Peter J. Schenk, AIR FORCE, May '57). The Squadron followed up a fine job of programming with the publication of an equally slick job—a forty-four-page brochure containing the entire transcript of the symposium. If you're interested—and hurry—you can get a copy by sending a check or money order for $1.50 to the Squadron, P. O. Box 4294, Town & Country Village, Sacramento 21, Calif. Make checks payable to the Capital City Squadron, Air Force Association.



"Where seldom is heard a discouraging word, and the skies are not cloudy all dayyy . . ."

☆

Navy ambitions in the strategic bombardment field had better be enlarged to include a copy of SAC's rigid security measures, if a United Press dispatch from Sydney, Australia, is any indication.

Seems that ten students from Sydney University wearing pirate costumes and armed with cardboard cutlasses, captured the US aircraft carrier *Bennington* in Sydney harbor not long ago. The students rowed out to the carrier at dawn, clambered on board unnoticed, made their way to the empty bridge and sounded the chemical warfare alarm. The skeleton night crew leaped out of bunks and dashed to quarters. Marines arrested the students and led them off the ship. Says the UP, "The admiral was not amused."

(Continued on following page)

A new portable, flashing light that can be attached to car roofs in a matter of seconds—making emergency vehicles out of otherwise unmarked cars—is the product our Breezecake girl for June is touting. A product of Federal Sign and Signal Corps, Chicago, the "Fireball," as it's known, has a twelve-foot cord that plugs into the car's cigarette lighter.

AF M/Sgt. William O. Costello, new Associate Editor of this magazine, receives Commendation Ribbon from Maj. Gen. Robert Landry, Fourth AF Commander, as Costello leaves service to take up editorial duties in Washington, D.C.

Meet AF M/Sgt. Roy H. "Moose" Morgan, a real fine line chief at the 327th F-I Squadron, George AFB, Calif. The story of how he decided to stay in the AF will be told on the ABC television show "Telephone Time" on June 11.

In our August '55 issue we carried a definition of airpower as laid down by Maj. Alexander de Seversky, written for the *American Peoples Encyclopedia*. Now comes a more current definition with Major de Seversky's comments on airpower in relation to space vehicles. It reads as follows:

Like seapower, which formerly controlled the water medium, *i.e.*, the surface of the sea and the depth below, thereby exerting a decisive influence on insular land masses, airpower controls the air medium and the space above, and thereby exerts a decisive influence on the entire surface of our planet. Since there is no definite demarcation between the earth's atmosphere and the outer space byond, and since air/space vehicles no longer necessarily depend on the earth's atmosphere for propulsion and sustenance, airpower and spacepower can be considered synonymous. Consequently, the postulates presented herein above to define airpower remain in equal force when applied to the term "spacepower."

Since airpower is likewise spacepower, long-range, unmanned air vehicles, ballistic missiles, and space vehicles and satellites are all equally logical weapons of airpower, to be wielded by an Air Force. This conclusion is further supported by the fact that even at the present state of the aero thermodynamic art there appears to be no eventual limit to the speed, range, or altitude of manned air/space vehicles, which may even exceed the performance of some unmanned air/space vehicles, including ballistic missiles.

The detection, interception, and destruction of all such vehicles, either at their point of origin or anywhere along their trajectory, through appropriate countermeasures of collision or other means, constitute a legitimate phase of air battle and are the mission of the Air Force, irrespective of whether the geographical location of the action is over land or over sea.

This being so, the basic military principles of economy of force and unity of command apply to all employment of any air/space vehicle. Thus, again, the inescapable conclusion is that the air ocean with its outer space extension is one and indivisible and must be controlled by a single, homogeneous force—under a single command—at the apex of the military establishment.

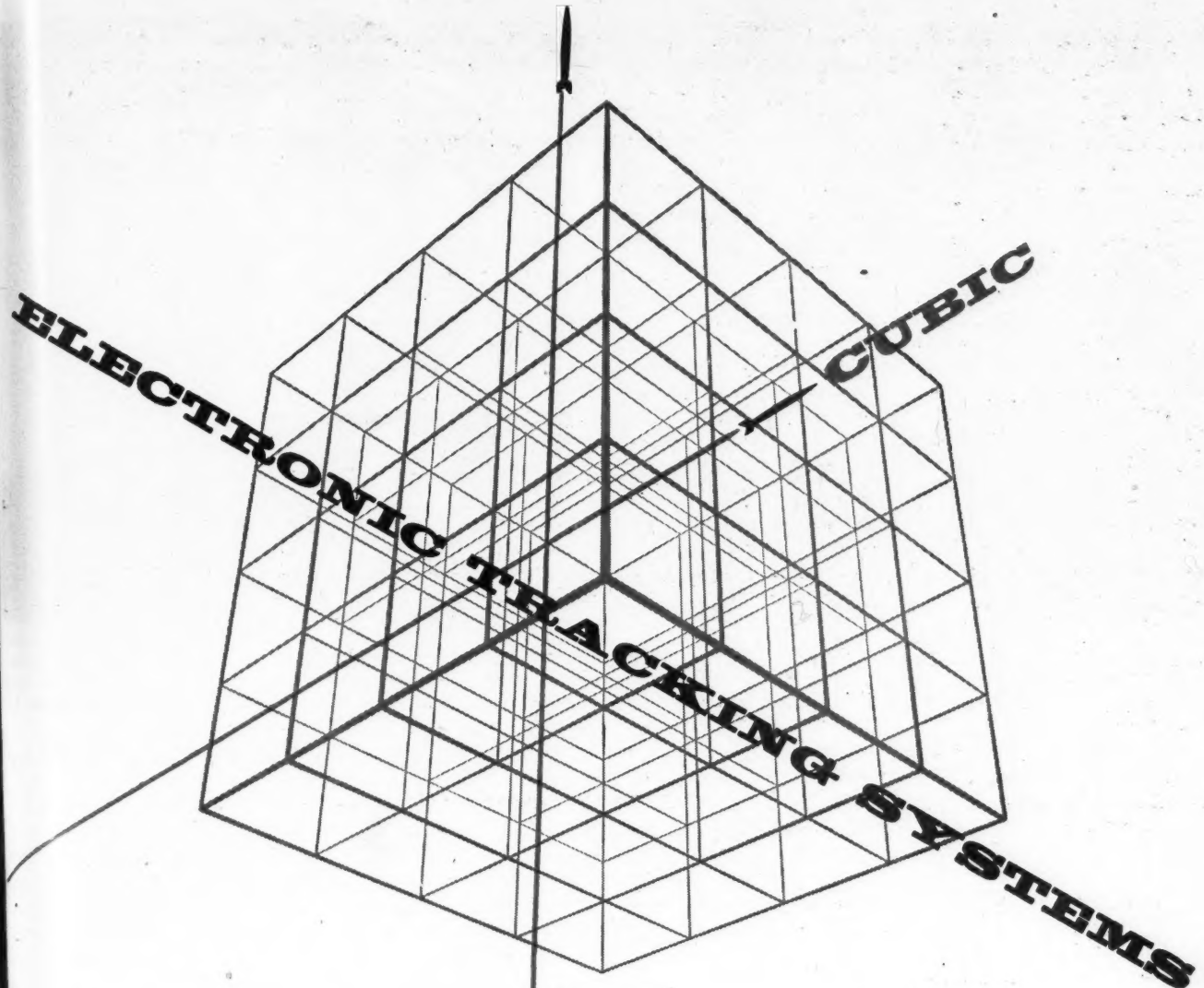
Although, for the time being, land and sea forces may justify the use of air/space vehicles for point defense of their respective forces while joined in battle with their opposing counterparts, such use is highly transitory. As has been shown herein above, the ascendancy of airpower was marked by a corresponding decline in the strategic significance of land and sea forces. The further expansion of airpower's influence, through supersonic mobility at limitless ranges and altitude, will impose further combat limitations on surface forces by denying them, *in toto*, the exercise of strategic mobility in their respective mediums. Their employment, consequently as a military force in an international conflict can no longer be profitable until the supreme question is resolved as to which side has the sustained power to use air/space vehicles and the capacity to deny that use to the opponent.

☆

This magazine's newest staff member is William O. Costello, who until this spring had been an AF master sergeant, serving as chief of the Public Information Division, Hq., Fourth Air Force, Hamilton AFB, Calif. On his release from service, Costello was presented the Commendation Ribbon (see cut) by Maj. Gen. Robert B. Landry, Fourth AF Commander, and cited for his efforts in "organizing and sustaining a public and Reserve information program from April 1955 until March 1957." He will be an associate editor of AIR FORCE Magazine.

☆

The thousands of Air Force men who received their basic training at Sampson AFB, N. Y., wouldn't recognize the old place today. Closed by order of Mr. Quarles more than a year ago, it now musters only a caretaker force of seventy civilian fire fighters, guards, and maintenance men under the supervision of Maj. Richard Smithson. It gets its mail via rural free delivery in a farm-type roadside mailbox. —END.



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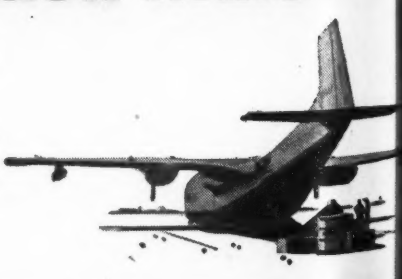

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AIR FORCE
JUNE 1957

The Great Missile Hoax

By James H. Straubel
EDITOR AND PUBLISHING DIRECTOR, AIR FORCE MAGAZINE

IN ITS desperate bid for pre-eminence in the long-range ballistic missile field, the Army has laid down a rolling publicity barrage to advance one of the greatest hoaxes in recent military history.

The hoax is buried in Army claims of leadership in the mission, experience, and capability for developing a 1,500-mile ballistic missile with thermonuclear warhead.

The public and Congress have been asked to believe, through a well-staged publicity campaign, that the Army's battlefield really extends at least 1,500 miles in depth; that the long-range ballistic missile is, after all, nothing more than a projection of the artillery shell; that such a long-range vehicle is a direct extension of the short-range missiles under development at the Army's Redstone Arsenal; that Redstone, with its wealth of German scientific talent, has proved itself superior to private industry in the development of the long-range ballistic missile.

Even in the early phase of its publicity campaign, the Army obviously was pressing. For one thing, the only mission the Army ever had received for an Intermediate Range Ballistic Missile was for the development of a ship-based IRBM for the Navy, under a joint project with that service. Yet, in public relations terms, the basic job of "company identification" with the product had been accomplished. Presumably, the Army's Redstone Arsenal and the long-range ballistic missile had become inseparable in the public eye.

That this was more public relations than fact was proved when the Navy pulled out of its joint missile development program with the Army to develop an IRBM of its own. This left the Army without an IRBM mission, but who would think so from what they read in the papers?

The public relations campaign reached a peak, however, when the Defense Department assigned operational control of the land-based IRBM to the Air Force, and provided for the Army to phase out of its development work in this area. Certain elements of the Army were not caught hands-down by the action, even though Gen. Maxwell Taylor, Army Chief of Staff, has, like a good soldier, announced his intentions of abiding by Mr. Wilson's decision. But by this time the Army had been established in the role of underdog, a favorable position from which to maneuver, and there were those in the Army eager to exploit this position.

Martyrdom, as a successful public relations device, demands individual participation. Out of the Redstone Arsenal came a self-appointed martyr, Col. John C. Nickerson, Jr., a former artilleryman engaged in Army guided missile work. Now the publicity campaign could be stepped up.

As a result, the court-martial of Colonel Nickerson for alleged security violations and perjury, normally a staid, matter-of-fact affair, is in danger of being twisted into a medicine show for hawking wild claims of Army prowess in missile development.

Colonel Nickerson's public statements have added to the confusion surrounding this trumped-up success story. Now each routine launching of an Army test missile, including jerry-built test weapons and duds, is being reported as a home run in an electronic World Series—

(Continued on following page)

all in apparent keeping with the determination of some echelons of the Army to play the hoax to the bitter end. It now is high time to lay that hoax to rest.

The hoax centers in the claim, basic to the Army's position, that in the development of two land-based IRBMs—the Thor of the Air Force and the Jupiter of the Army—two highly competitive approaches to the same weapon are involved.

This claim is basic to the Army position because of its relationship to the prevailing national policy which encourages technical competition in "high risk development" weapon systems (the risk referring to the chances of development success in a desired time period). Under this policy, developments are considered *technically* competitive when each is capable, individually, of significant and timely contributions to high performance, or advancing the state of the development art. In such cases, both approaches should be pursued. This reasoning makes sense, for in the critical arms race it would be foolhardy and dangerous not to proceed with true competition in fundamental areas. When, for example, such competition developed in the pursuit of a successful Intercontinental Ballistic Missile, the Air Force itself established a second, and technically competitive, program.

On the other side of the "high risk" policy, if two approaches to development are not competitive (in terms of schedule, performance potential, and state of the art) one or the other of the approaches should be abandoned. This also makes sense, for it helps eliminate duplication and waste in our multi-billion-dollar defense effort, and helps conserve the already scarce supply of scientific and technical talent available to this effort.

The original Defense Department decision of late 1955 to pursue both the Air Force Thor and the Army Jupiter programs for the development of an Intermediate Range Ballistic Missile presumably was based on the belief, perhaps logical at the time, that these two programs would, in fact, be technically competitive. Likewise, the recent Defense Department decision to abandon, in effect, the Army's Jupiter project was consistent with the high risk development policy. By late 1956, there was ample evidence that the Thor and Jupiter programs were no longer, if they ever had been, technically competitive. And, unfortunately for the Army, the Thor development appeared to be the most promising.

At any rate, the Defense Department decision was carefully weighed. The knowledge on which it was based represented the composite findings of the best scientists in the nation, men of objectivity who had no axe to grind for either Army or Air Force. In fact, the long-range ballistic missile program of the nation has been under the closest, most persistent, and most expert scrutiny of any military project in our history.

At the same time, it must be reported that when the Jupiter project of the Army was established, equal scrutiny of its potential had not been applied. Established under pressure of alarming intelligence estimates of Russia's IRBM developments, it involved too much of a "crash" program for comprehensive analysis.

It is now apparent that the Defense Department, at the time it gave Jupiter the green light, vastly overrated the continued importance of the ten-year-old accumulation of know-how about German V-2 systems, by now well overtaken by technical progress made in the United States since the war. The superb individual qualifications of the German scientists who occupy key technical positions at the Army's Redstone Arsenal are beyond question; but the history of modern weapons development shows clearly that technological advances flourish in the competitive industrial climate, while they are stifled in the bureaucratic atmosphere and technical isolation prevailing in military arsenals. Thus, the over-all capability of Redstone Arsenal has been grossly overrated.

For example, when the Jupiter project was given the go-ahead in late 1955, it apparently was not understood that the Army would have to depend, as it has, on an Air Force-industry-developed rocket engine for the Jupiter, as it had previously depended on Air Force-industry-developed engines for its Redstone missile. Certainly it could not have been understood, at the time, that a large liquid-fuel rocket engine has *never* been developed or produced within the Redstone Arsenal.

Nor could it have been proved, at the time the Jupiter missile project was established, that the German-conceived airframes for short-range missiles—still basically of World War II design—would prove to be inferior for the IRBM to the advanced structures developed by our aviation industry.

So great were the unknowns and the development risks in the increasingly sophisticated field of long-range ballistic missiles, that it is not surprising the Jupiter program was originally established. However, it would have been equally surprising, once the facts became apparent, if the Jupiter program had been continued.

The facts have been known for some time now. These are facts the Army has attempted to becloud with its publicity campaign. Public relations is no substitute for performance. Respect cannot be legislated—it must be earned. On the other hand, desperation often overcomes logic. So the great guided missile hoax has come into being.

The hoax is exploded—again remembering the "high risk" policy—when it is understood that, if the program were continued, the Jupiter missile of the Army quite likely would develop into something quite like the Thor missile of the Air Force, but at a much later date if one is to judge by present rates of development.

Now, what service develops what in guided missiles is, in itself, relatively unimportant. The important consideration is that the taxpayer get the best product for his money, and as fast as possible. But it is not healthy for the taxpayer to be hoodwinked into believing he is getting something that just isn't there. That sort of hoax, which exists in the missile program today, deserves exposure.

For example, while it may be an interesting academic exercise to trace the long-range ballistic missile back to the bullet, practically it would make as little sense to go back to the rocks cast by primitive man. Even the spent match flipped into the wastebasket travels a ballistic path. All are in a sense "projectiles" which involve the same ballistic principles. However, the serious development of relatively long-range ballistic missiles and air-foil controlled missiles has a fairly recent history. It embraces not only ballistic principles but also the sciences of aerodynamics and thermodynamics. It inevitably leads to a multiple-characteristic vehicle embracing aspects of several sciences.

In long-range ballistic missiles, as one scientist has put it: "We find vehicles incorporating the subtle structural talents of the airframe industry, the highly sophisticated guidance and control mechanisms developed for imparting stability, for navigating, and for controlling the bomb release of modern airplanes, married to the high-performance rocket propulsion system, to produce an entirely new species of vehicle."

Except for the propulsion system, all the major elements of this new creature stem directly from the aircraft development art. Therefore, to link the bullet to the

long-range ballistic missile is as far-fetched as comparing John Nickerson with Billy Mitchell. But aside from these syllogistic attempts to tie past history to the present, let us measure the Army's missile claims against the facts, while keeping in mind the yardstick of "technical competition."

The story begins with the conclusion of World War II, when more than eighty German V-2 rockets were shipped to this country, as war booty, and were fired at White Sands by the Army. Some of the German scientists followed the missiles to the United States and eventually settled down at the Army's Redstone Arsenal, near Huntsville, Ala.

Simultaneously, during 1945, the late General of the Air Force "Hap" Arnold had working for him a group of eminent scientists, under the leadership of Dr. Theodore von Karman. General Arnold's Scientific Advisory Group told him, in late 1945, that transoceanic ballistic missiles were technically feasible. Of course, prior to the advent of the "small" H-bomb, such rockets would have had limited military usefulness.

At any rate, in 1946, the Air Force contracted with the Convair Company to explore subsonic and supersonic missiles, control systems, light-weight structures, and other long-range missile problems. This was known as the MX-774 program. In 1948, under this Convair project, three vehicles were fired at White Sands. These tests demonstrated for the first time the feasibility of swiveling rocket engines and the potential of light airframe structures. Both represented significant improvements over the V-2 techniques originally developed by the Germans.

The Air Force had also established in 1946, at North American Aviation, Inc., a project known as MX-770, to develop long-range rocket-propelled vehicles. Work on this project rapidly demonstrated that the V-2 propulsion system was basically inadequate. The MX-770 project also stimulated interest in up-rated engines of higher performance and lighter weight. The Air Force kept the North American propulsion project alive despite the desperate 1947-49 economy drive, which forced wholesale cutbacks in many worthwhile Air Force research and development projects. Out of this effort came the up-rated LR-43 rocket engine which, while a definite advancement, still used V-2 fuels.

In 1950, as a result of further Air Force-sponsored propulsion research, and LR-43 tests, the Air Force began the development of a higher performance engine for its MX-770 project, an engine employing different fuels than the V-2 and more advanced techniques than the LR-43. This project represented the final major break with German V-2 experience.

The Army, by 1950, had its short-range Redstone missile under development. In desperate straits for an adequate Redstone propulsion unit, the Army went to the Air Force and requested that it be permitted to use the LR-43 engine. The Air Force agreed. Although obsolete (since 1950) for the Air Force requirements, the LR-43 has remained the power plant for the Redstone missile, with few, if any, improvements having been made over the years.

In 1951 the Air Force entered into its original Atlas ICBM contract with Convair, to explore long-range supersonic missile development, including fabrication and testing. For such a missile, relatively large and low-yield atomic warheads were still in order, forcing a rigid guidance accuracy requirement.

By 1953, as a result of hydrogen bomb testing, it became apparent that a thermonuclear warhead of vast yield could be made available in a relatively small unit. This was a major breakthrough. Now the rigid guidance requirements could be relaxed. That year Trevor Gardner, then Air Force Assistant Secretary, formed a scientist-industrialist committee (code name: Teapot Committee) with the late Dr. John von Neumann as Chairman. After

(Continued on following page)

President Eisenhower on the Army Ballistic Missile

Pertinent to this discussion of the Army's claims in the Intermediate Range Ballistic Missile field is the following excerpt from the transcript of President Eisenhower's press conference of May 8:

Martin L. Arrowsmith of The Associated Press—Mr. President, I have been requested to ask you a two-part question dealing with the Army's curtailed role in the guided missile field.

The newspaper which submitted it, puts it this way: Why should not the Army extend its ballistic program to ranges of 1,500 miles, to meet the requirements for tactical missile support; and, secondly, since this is such an important defense issue, do you think Col. John Nickerson [of Redstone Arsenal, Huntsville, Ala.] acted properly in making public the Air Force-Army controversy over the IRBM (Intermediate Range Ballistic Missile)?

President Eisenhower—Well, of course, Mr. Arrowsmith, you are asking me questions that properly belong to the Defense Secretary, who is a little bit more familiar with the details. Now, we have in the Defense Department one man who is put in charge of all guided missile development. The reason for that is because of terrific expense in this activity. We want to prevent duplication, so far as possible.

These machines, the research, even to get the first principles of them fixed and determined, are extremely costly, so we don't want each of the three services going its own way. We get a man in who is knowledgeable, particularly in this form of science, and he is made sort of the representative of the President and Secretary of Defense, to avoid that duplication.

Now, just why or when or for what reasons they assign any particular missile, any particular type to one service, is not always readily apparent, but I would say this, just from a knowledge of the Army: Why would the Army want a 1,500-mile missile itself, because the first requisite of using that kind of weapon is that you have very good observation to find out whether it is doing the job you thought it was? The only way you can find out would be with an Air Force that could penetrate at least 1,500 miles into the enemy territory, and that puts you right square into the big Air Force business.

So I should think that that kind of consideration would have something to do with your point, with your question.

Now, as far as Colonel Nickerson is concerned, I have, of course, not looked up the details of all the complaints, but the complaint made to me was that he exposed to public view very secret papers of the Defense Department, and not that he argued publicly with the Air Force.

evaluating the pertinent developments, this committee determined that the achievement of a *military useful* ICBM was feasible within a reasonable length of time.

But the Teapot Committee made it clear that propulsion was the "pacing factor" in the ICBM program, and endorsed the Air Force's research program for a new type ICBM rocket engine. The committee also urged the establishment of a unique military-science-industry management team with authority and control over all aspects of the ICBM program.

The Air Force immediately established, within its Air Research and Development Command, a Western Development Division in Los Angeles, with a contractor (Ramo-Wooldridge Corporation) to provide a closely integrated scientific-management staff for systems engineering and technical direction.

The immediate task of the new division, with Maj. Gen. B. A. Schriever in command, was a complete systems study of the Atlas missile program, looking toward a reoriented approach to that project. These studies led the Air Force to conclude that a second and technically competitive approach to Intercontinental Ballistic Missile development was advisable. This led to the establishment of the Titan program for an Intercontinental Ballistic Missile, with the Martin Company of Baltimore as the weapons system contractor.

By the spring of 1955, progressive Soviet missile development stimulated Department of Defense interest in an Intermediate Range Ballistic Missile. The Western Development Division of the Air Force asked for IRBM proposals from several industrial firms, and from the Army's Redstone Arsenal as well. Of more than a half dozen proposals submitted, all—including Redstone—provided for the use of the Air Force-developed ICBM engine of North American Aviation.

The Army then obtained agreement from the Navy for a united effort in the IRBM area, and for good reason. The Navy could show a legitimate requirement for an IRBM (ship-based). The Defense Department gave the Army and Navy a joint mission to develop a ship-based missile for the Navy—Army to develop the airborne vehicle, Navy to develop the extensive shipborne elements of the weapon system.

By the summer of 1955, the highest national priority had been placed on the ICBM. In the early fall of 1955, an equal national priority was placed on the IRBM. Thus, the Thor and Jupiter projects officially came into being in the final days of 1955.

The Air Force, based on its ICBM experience and organization, was able to introduce the IRBM program into its structure with relative ease. For example, in setting up the Thor project, the Air Force has had to add only one contractor—the Douglas Company. The rest of the program stems from its ICBM effort.

Early in 1956, the Army pressed a request for the ICBM engines developed and financed (more than ninety percent) by the Air Force for the ICBM program. Although the engines had to be taken from in-plant development at North American, the Air Force recognized the equal priority accorded the Jupiter program. The Air Force agreed to supply the Army with one-half of the North American engines it had scheduled for IRBM use—one-for-one off the development line. So the Army began its IRBM development work at Redstone Arsenal with the new Air Force rocket engine. The Army has continued to use this engine for its Jupiter missile, just as it has used an Air Force engine for its Redstone missile.

Now let us consider other elements in the Jupiter versus Thor issue. For example, both missiles are in the same range category, since the range requirement has been specified by the Department of Defense, and they carry the same propulsion units. They also carry the same payload, since the warhead is delivered to both services by the Atomic Energy Commission.

For guidance and control systems, both Jupiter and Thor must depend on systems which stem directly from developments for manned aircraft and air-breathing missiles. There simply is no other place to go. (Certainly the control system devices of the Jupiter have no antecedents in the artillery shell). There are known to be competitive approaches to inertial guidance systems, but everyone involved is pushing the state of the art. The Air Force certainly can't afford to rely on any one approach; and it is known to have the best qualified men in the country exploring all approaches. We can assume the Army is equally well advanced, but in the long run both will have the best systems available through the information-interchange policy which permits few secrets between services in this business. Meanwhile, the Navy is believed to have chosen the Air Force approach to guidance, over the Army system, when it began its independent development of an IRBM, called Polaris.

The nose cone, key to the critical problem of re-entry of the missile into the atmosphere, could well involve competitive approaches to the same problem. Indeed, the Air Force now has at least two technically competitive approaches under way. In this area of hypersonic flow, the Air Force is known to have accumulated valuable data from its shock tube experiments and its highly successful launchings of the Lockheed X-17 re-entry test vehicle. Further, it is less likely that significant new data will be obtained by the Army because of its research and development management philosophy. While the Army still basically follows the archaic arsenal or "gun factory" approach, cloistering a relatively small group of specialists in an intellectual desert, the Air Force has dozens of universities and industrial laboratories at work competitively on a broad front.

A final consideration is the basic structure of the missile. The Army, of course, is known to have followed German experience in basic design; in fact, it regularly boasts of this fact. But, while the headlines lead one to believe in the relative success of Jupiter test launchings, there is a good bit of the hoax mixed up in this end of it. For example, reports emanating from Washington imply that test Jupiters have been destroyed in flight by Range Safety Officers in accordance with planned test programs, when there is an equal chance that these Jupiters blew up of their own accord due to inherent weaknesses.

Certainly the Redstone Arsenal-conceived airframes of the present Jupiters, based as they are on extension of the V-2 design philosophy, could hardly employ the advanced structures available from the much advanced aviation industry experience in this country. In fact, if its program continued, the Army could well be expected to adopt the Thor-type airframe, which obviously stems from this industry experience. Advances in this field are too important for the Army to pass up. In fact, the Army is known to have contacted the aircraft industry, searching for a better airframe, just as it came to the Air Force for rocket engines years ago.

So it is that the Jupiter and Thor programs inevitably are coming together in terms of their basic elements—airframes, engines, and guidance systems. That they are basically competitive vehicles is a hoax—and nothing more.

—END

How to Reduce the FEDERAL BUDGET

By Sen. Stuart Symington

THE proper Committees of the Congress are now actively examining the defense budget, with all of its implications as to future structure, armament, force levels, and manpower of our armed services.

There is a sobering obligation on all of us to seek ways to reduce the taxpayers' burden, while maintaining and increasing the security of our country and that of the Free World.

No one needs to be reminded of the continuing tensions in the Middle East, and of our potential military commitments in that troubled area. I made a short visit to Europe three weeks ago and am sure you are aware of the situation which exists today with respect to our defenses in that part of the world.

Here are some essential facts:

• The bulk of the French armed services have been withdrawn from the NATO European defense structure and have been re-deployed in other areas.

• The recently announced British defense policy has served notice to the United States and other Allies that, in the main as the result of our actions in Suez, the facts of economic life have forced this once-powerful nation to reduce its military forces; and to rely more and more upon the protective power of the United States.

We are all concerned—and properly so—about the stability of our national economy and the amount of money we devote to national defense.

There has been great emphasis on the conservation of our dollar resources. My concern today is with the wise, effective, and economical utilization of the most precious resources of all—our men and women.

Today we are squandering people in a manner which would not be countenanced for one instant if it were dollars—not men and women—we were pouring down the drain.

What kind of economy is it which spends billions of dollars for equipment—only to let it stand idle for want of trained men to maintain and operate it?

Many of our newest and fastest models of air defense aircraft, already bought and paid for to the tune of millions of tax dollars, sit useless at our air bases for this very reason.

There would be cause enough for grave concern if such waste were unavoidable. But when a sound remedy lies at hand, and is ignored, such waste becomes tragic folly.

Many of the stop-gap measures which could bring short-term solutions were evident. But we were assured by Administration leaders that long-term proposals were being developed by the Defense Department which would go to the root of the problem and provide more comprehensive long-term solutions.

A special committee to examine the military personnel retention problem was appointed more than a year ago by the Secretary of Defense. Its chairman was a well-known industrialist—Mr. Ralph J. Cordiner, President of the General Electric Company.

The Cordiner Committee, composed of business, professional and governmental officials, was backed by a carefully selected military staff.

Officially called "The Defense Advisory Committee on Professional and Technical Compensation," the Cordiner group spent a full year conducting its study. It produced an exhaustive and comprehensive report, recommending measures designed specifically to retain for the armed services the skilled men who today are leaving the uniformed ranks in droves, and costing us taxpayers billions of dollars in the process.

When the President presented his budget message to the Congress last January, he said specifically that "any legislative recommendations growing out of the work of this Committee respecting personnel policies and compensation systems of the military services will be submitted at a later time."

The Cordiner Committee believes that it is unwise for the armed forces, and extravagant for the nation, to continue to purchase highly advanced weapons systems, but not have men of sufficient competence to understand, operate and maintain such equipment.

Excellent military machinery now on hand is not being fully utilized or maintained because the services cannot keep trained men.

The armed forces today are in a badly unbalanced situation. Efforts to develop and produce advanced weapons and strategic concepts are moving forward rapidly. But efforts to develop the men to utilize such equipment and concepts are being frustrated.

The Cordiner Committee is convinced that the timely solving of our defense manpower problem is more important than providing increasing amounts of money for complex equipment for which trained hands are not available.

The military services must develop a more professional, highly skilled force. That force must be developed on the basis of a balance of the kinds of skills and knowledge it takes to meet changing technology and world conditions. That force must be developed so as to apply effective economies in the utilization of the nation's financial, material and human resources.

The compensation practices of the armed forces are so clearly out of step with the times, so clearly inadequate to the needs of a technically advanced form of national defense, and so clearly contrary to all that has been learned about human motivations, that they can presently be called a major impediment to effective national security.

This country now has a real opportunity to begin cutting the cost of defense, the largest single item in the federal budget, by instituting a modern system of manpower compensation and personnel structure in the Armed Forces.

The Cordiner Committee believes five major results could be achieved through adoption of their plan:

1. About a fifteen percent improvement in the combat capability of the United States Armed Forces.

2. Savings up to five billion dollars annually by 1962 in the cost of producing our present levels of combat capability.

3. Sharp reductions in training accidents now, and in military and civilian losses in the event of war.

4. Reduction in the number of military personnel required to produce a given level of national security.

5. A long-term solution to the basic manpower problems of the armed forces.

This program, if adopted, would provide the kind of incentive program that would result in an organization made up of career members, serving because they want to—not because they are forced to by law.

(Continued on following page)

Moreover, this plan has the added advantage of a potential reduction in draft calls. In the long run, it might make conscription unnecessary.

And here is an important fact. The Secretaries of the military departments, after having reviewed the proposed program, are convinced of its desirability and effectiveness. Therefore, they have offered to absorb the entire cost of the first year.

According to data presented by the Committee, an effective date of law desirable from all aspects would be January 1, 1958. On that basis the services would be required to find only a total of $150 million to cover the additional cost for that half-year.

Here then is a proposed program, undertaken at the Administration's expense by one of our greatest business managers, developed by experts, approved by the Secretary of Defense, members of the Joint Chiefs of Staff, and the service Secretaries, submitted to the Bureau of the Budget, and *pigeon-holed*—despite the fact it does not require one cent of new appropriation in the present budget, and yet gives promise of markedly improved national defense, with fewer people and at less cost.

It is now May 13. Four months have passed since the President's budget message. Surely now should be that "later time" to which the President referred.

The recent announcement of some pay raises in certain categories is in no sense a part of the Cordiner Committee recommendations.

We are told that the Secretary of Defense, the Secretaries of the Army, Navy, and Air Force, the Chairman of the Joint Chiefs of Staff, and the Chiefs of the three services had all endorsed the findings of the Cordiner Committee.

Mr. Cordiner himself said:

"We urge that they receive earnest consideration by the public, the Congress, and the Administration, because they represent an important opportunity to improve the national security, and at the same time to begin cutting down the cost of defense, the largest single item in the federal budget."

About two weeks ago, however, John Henebry, President of the Air Force Association, charged that the Administration had officially rejected a legislative draft prepared by the Department of Defense to implement the Cordiner proposals—and that the Bureau of the Budget, acting in behalf of the White House, has turned back as unsatisfactory the Defense Department's draft of legislation designed to put this plan into operation.

"This action was taken," Mr. Henebry said, "in the face of assurances by Secretary Wilson that the proposed legislation would require no increase in the defense budget already submitted to Congress. Further, the proposed legislation was rejected with the knowledge that it represented the unanimous opinion of the Secretary of Defense, the Secretaries of the three military departments, and the Joint Chiefs of Staff, as an essential contribution to the nation's defense."

This Association also charges that pressure from the Bureau of the Budget had led the Department of Defense to hold up the Cordiner program, and consider only action based on relatively minor pay adjustments in certain critical skills.

The recent action previously referred to proves this charge to be correct—more patchwork on a shaky and obviously inadequate compensation structure.

Such an approach is in direct contradiction to the Cordiner Committee findings.

There was no need to spend a million dollars on any exhaustive study to come up with this kind of an answer. We already had drafts on various such points more than a year ago. But action on these was deferred because the Secretary of Defense was spending hundreds of thousands of dollars on a study of fundamental remedies; and now these remedies apparently are being ignored.

Despite the clear-cut warning from Mr. Cordiner and his Committee, the piecemeal approach is being attempted.

Let me emphasize that this is not a problem of the Air Force alone—but one which impacts upon the combat effectiveness of each of the armed services—Army, Navy, Air Force, and Marines.

Now what does Mr. Cordiner have to say about the anticipated effect of his proposals? What does he have to say about Mr. Brundage's allegation that a change in the military compensation would create inflationary pressures? Here are his words:

"Because of inadequate information, many people have been led to believe that the Committee's recommendations are nothing more than a general pay raise for military personnel, adding still more to the oppressive costs of national defense and to the current forces of inflation.

"NOTHING COULD BE FARTHER FROM THE TRUTH. Our recommendations contemplate savings and DEflationary influence."

This is welcome news indeed. Even more welcome is Mr. Cordiner's statement that "it is the opinion of this committee, based on both industrial experience and on studies prepared for the Department of Defense, that savings and gains up to $5 billion a year can be achieved within five years or less." "The same measures," says Mr. Cordiner, "which can produce these savings for taxpayers could also increase the combat effectiveness of the Armed Forces by about fifteen percent, without substantial change in the defense budget."

It now seems evident that these savings and the increased combat effectiveness will never be permitted if the Administration has its way. Clearly, if Congress awaits Administration recommendations in this matter, it will never get the opportunity, at least in this session, to examine into the needs for corrective action and initiate legislation based on the Cordiner proposals.

It is now also clear that the best we may expect is piecemeal, patchwork, stop-gap recommendations designed to appease for the short haul—rather than any long-term investment approach.

We owe it to ourselves and to the nation to countenance no further delays in carrying out a program for maximum utilization of military manpower at minimum cost. Accordingly, on May 8 last, I introduced S. 2014, a bill based on the Cordiner Committee Report to "change the methods of computing basic pay for members of the uniformed Services."

This bill in all its detail may not be the final answer—but it will throw the subject open for discussion and legislative action.

It is designed to change a system of pay this country adopted from the British Navy in 1812.

If we do not want to run the danger of taxing ourselves out of the free enterprise system, we should promptly take advantage of the billions of dollars of savings which would come to us each year if the recommendations of the Cordiner Committee are carried out.—END

The foregoing is a speech delivered on May 13 in Kansas City, Mo., before the Missouri Bankers Association. It should be read in conjunction with our editorial on the Cordiner Committee legislation on page 31. Note that the bill to which he refers, S. 2014, bears the co-sponsorship of a Republican Senator, Barry Goldwater of Arizona.

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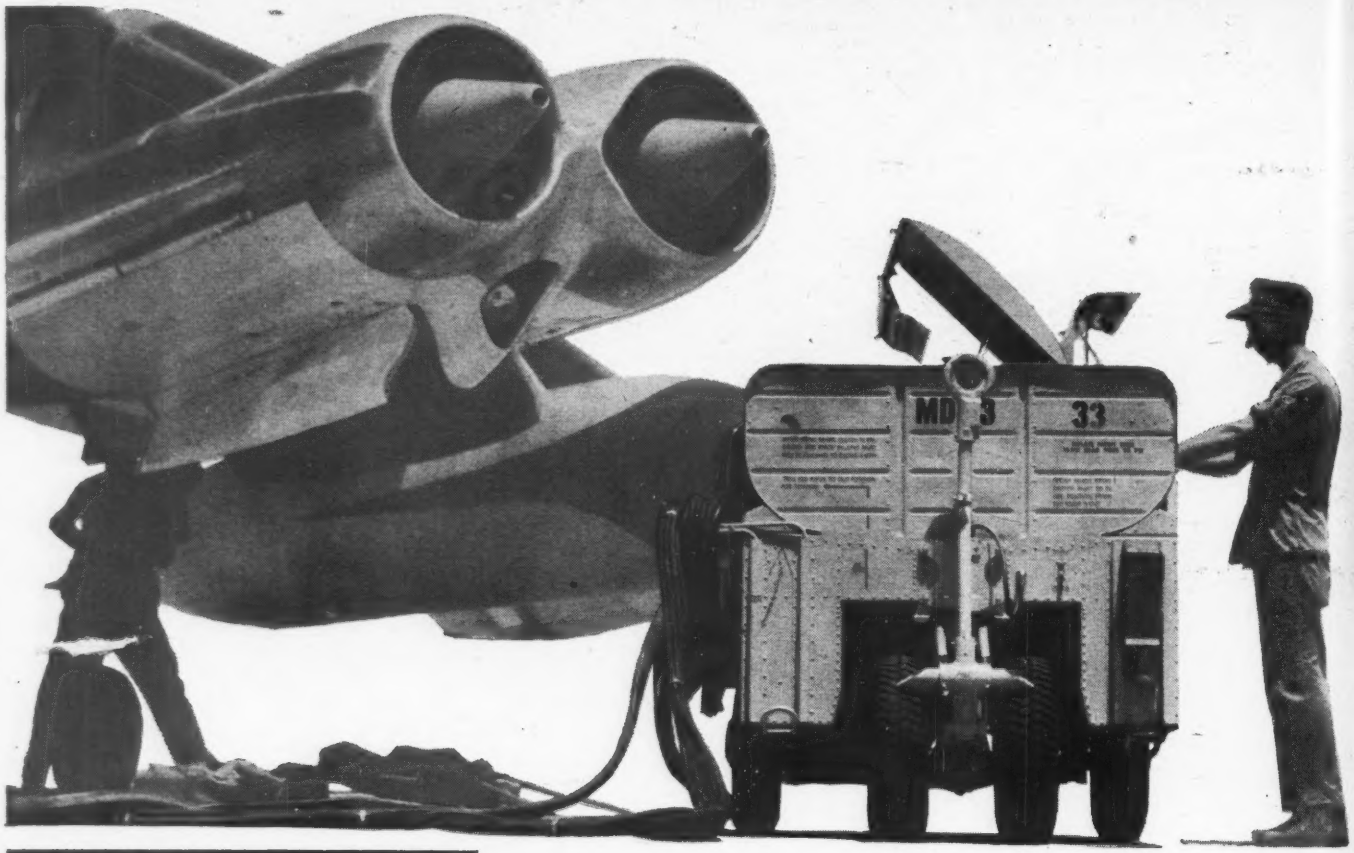

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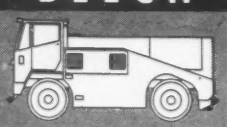
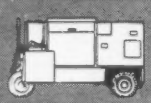
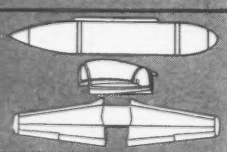
	MA-3 MULTI-PURPOSE VEHICLES
	C-26, MD-3 POWER UNITS
	TANK-WING-MAJOR SUBASSEMBLY SUBCONTRACT PRODUCTION
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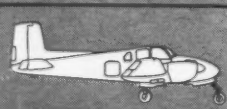
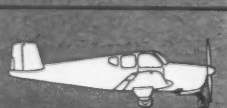
	BEECHCRAFT L-23 TRANSPORTS
	4-PLACE BEECHCRAFT BONANZA
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A/1C William Johnson, a member of the combat control team, stands packed and waiting for a lift to the line.

Capt. John Nightingale—a rough and ready team leader.

WATCH THAT FIRST STEP...

Have a look at one of the AF's combat control teams—the first men in on an airborne invasion

By Jim Winchester

PHOTOS BY
T/SGT. LLOYD A. BORGUSS

SOME SAY the Army's airborne infantry and special forces troops are made of cast iron, eat raw meat, and can survive just about anything, including a direct hit from a four-star general.

But it's about time some attention was directed to a handful of Air Force units—now stationed in the United States and in Europe—who have staked out a claim to their own brand of ruggedness.

They are the comparatively new, still relatively unknown combat control teams.

They're assigned to troop-carrier wings, and their mission is to parachute into combat areas ahead of the airborne infantry and special forces. After landing in enemy country, anywhere from thirty minutes to an hour and a half before the main body of paratroopers is scheduled to arrive, these robust Air Force volunteers prepare the way for the big jump.

(Continued on following page)

One member of the jump team gets an assist on hooking up his chest chute.

After a final double-check of their equipment, members of the team start to load onto the Fairchild C-119 that will carry them to the drop area in this practice exercise. Each man will carry a carbine and sidearm when he jumps.

With portable radio and radar equipment and other navigational aids, all of which they carry with them when they jump, they set up a do-it-yourself control center.

Within minutes after they hit the ground they're radioing the vital word on weather, disposition of enemy forces, and wind directions back to the operation commander. Largely on the basis of this data, the commander orders the mission to go ahead or cancels it, even though the planes and men may already be in the air.

If the mission is on, the Air Force controllers then set up navigational aids to get the troop-carrier planes over the drop zone's timing and impact points in proper sequence and position. During the drop itself, they direct air traffic and, after the men are on the ground, direct the dropping of equipment and supplies. Once the airhead is established, they run a portable control tower and supervise the air evacuation of the wounded. While doing all this, they have to stave off the enemy who, understandably, takes a very dim view of their being in the vicinity in the first place. As a result, it is estimated that combat casualty rates for these controllers would run as high as fifty percent, or better.

Not long ago, at Neubiberg Air Base, just outside Munich, Germany, I watched one of these teams, from the 5th Aerial Port Squadron, attached to the 317th Troop-Carrier Wing, stage a simulated operation.

In charge of the fourteen-man team was thirty-two-year-old Capt. John Nightingale, a burly, six-foot one-inch, 200-pound, ex-football player from Utah State, who served as a Navy quartermaster on a minesweeper in the Pacific in World War II. Assistant team leader was M/Sgt. Bruce E. Patrick, a thirty-six-year-old former infantry paratrooper, from Ada, Okla. Jumping with them were a dozen other NCOs and airmen, all volunteers, all highly skilled radio, radar, control tower, or navigational specialists.

"These guys are the best damn bunch of actors in the world," Captain Nightingale, a dead cigar clamped between his teeth, told me as we sat inside a C-119, droning toward the drop zone. "Look at them there, just before a jump. You'd think they were going to a party."

Twenty minutes from the drop zone, a loud bell sounds and the relaxed controllers begin to stir, gathering their equipment, helping each other tighten straps and buckles.

Each man is carrying more than eighty pounds of equipment in a huge, oversized, foam-rubber-padded general purpose bag, along with a gas mask, field pack, bed roll, carbine and sidearm, and a shelter half.

Four minutes from the drop zone, another bell sounds. Captain Nightingale, the dead cigar now chewed down to a stump, moves around slowly, checking each man's equipment.

"Get ready," the captain shouts in a gravelly voice.

The men, alert now, sit rigidly in their seats and stamp their feet to let him know they understand.

"Stand up! Hook up!"

Bent beneath the weight of their gear, they hook static lines to an overhead cable.

"Check your equipment!"

Carefully the men look each other over. Each man hits the back of the man in front of him.

"Stand in the door!"

A green light flashes. The C-119 is a bare 900 feet above the ground as T/Sgt. Albert Campbell, who likewise is chewing a dead cigar, leads the line out into space. Quickly, the others follow.

Less than sixty seconds after leaving the C-119, the first member of the control team is on the ground. Heavily loaded as they are, they drop rapidly, and a special technique is employed to avoid landing injuries. As soon as their chutes snap open, the jumpers

(Continued on page 55)

The "actors," as their team leader calls them, relax as best as they can as the plane drones on. There'll be plenty of action after the warning bell sounds.

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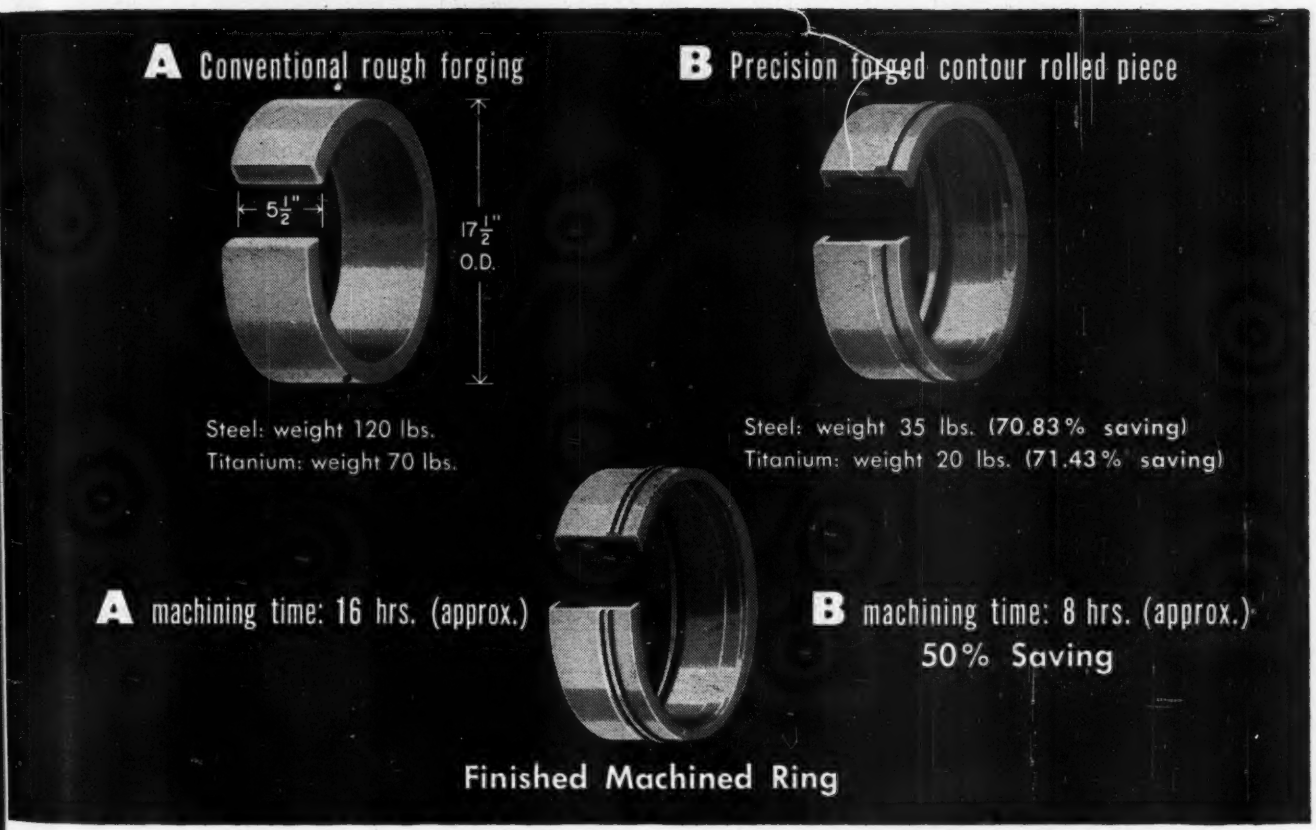
A Conventional rough forging
B Precision forged contour rolled piece
5½"
17½" O.D.
Steel: weight 120 lbs.
Titanium: weight 70 lbs.
Steel: weight 35 lbs. (70.83% saving)
Titanium: weight 20 lbs. (71.43% saving)
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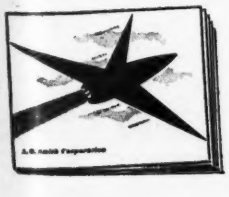

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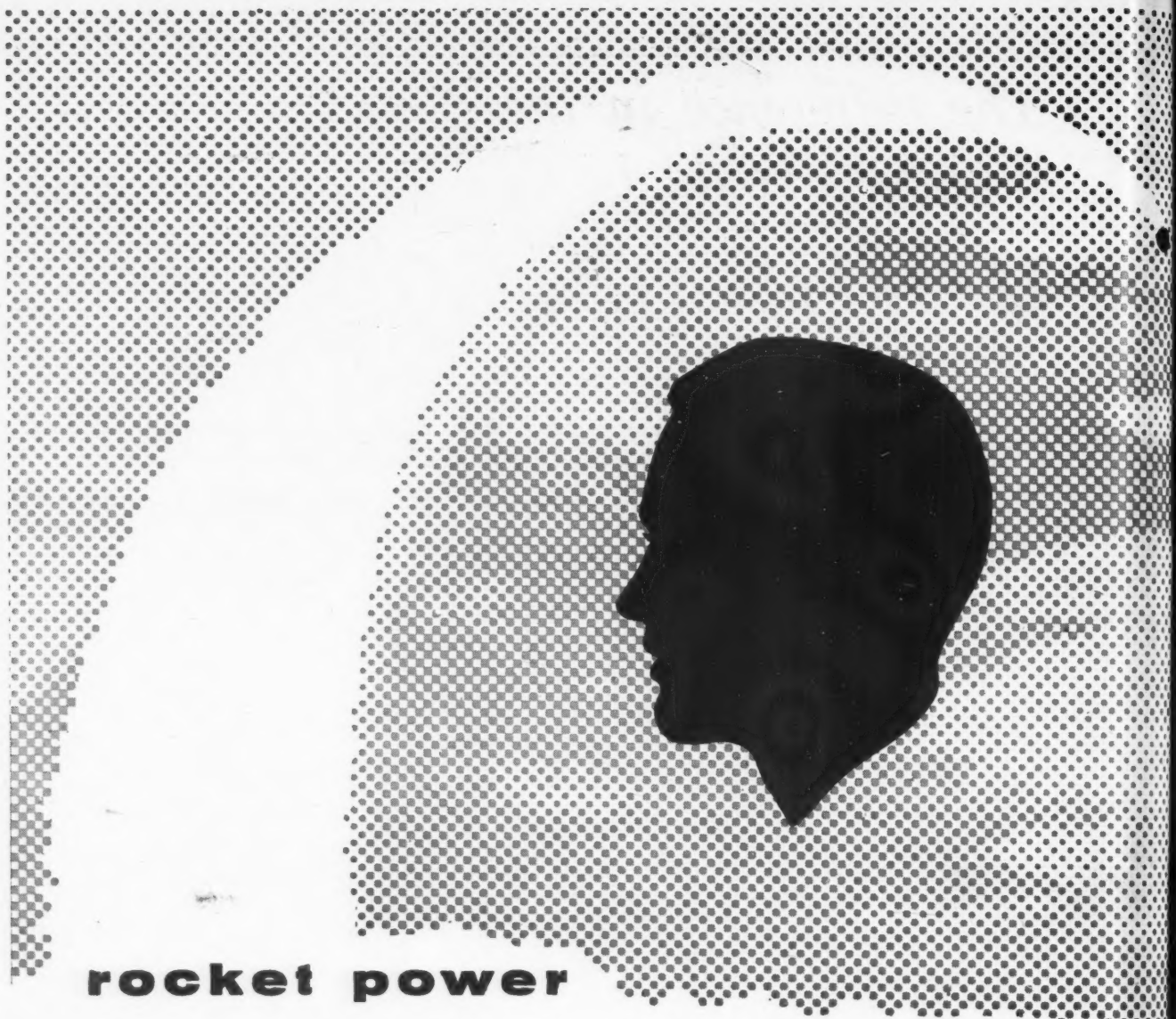

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reach down and unhook clamps holding the bottom of the heavy general purpose bag to their legs. Anywhere below fifty feet they hit a release that drops the bag—carried attached to their chest reserve chute. If they ride the bag to the ground, they'll most likely end up with a broken leg, at least. This GP bag, loaded with sensitive electronics and radio gear, is padded with felt and foam rubber to protect the equipment when it hits earth.

On a regular combat jump an airborne infantry assault team—twenty-six men if they're flying in a C-119 and fifty men if in a C-124—jumps with the control team to provide a perimeter defense while they set up and operate their equipment.

Once on the ground the team assembles quickly, then spreads out to its assigned jobs. Fighting, except as an absolute last resort, is not one of its tasks.

"We aren't supposed to pick up a weapon until our work is done," says Captain Nightingale.

One of the mechanics sets up a radio and checks it out. Another sets up the ten-pound PMQ-4 portable weather station and starts checking wind direction and velocities, dew point, and barometric pressures.

Speed is essential. Just thirty minutes away are other C-119s heading for the area, loaded with paratroopers.

Basically, the control equipment with which these teams work—all portable and all carried with them when they jump—is this:

- Two battery-powered, motor-driven rotating beacons. They can be seen for two miles and, with their batteries, weigh forty pounds each.
- Two battery-powered, automatic radio homing beacons, weighing twenty-five pounds each.
- Two PPN-2 battery-powered radar beacons, weighing twenty pounds each. The signal sent out by these beacons shows up as a blip on a troop-carrier plane's radar scope. Both the homing beacon and this radar beacon can be coded.
- Two TRC-7 VHF radios, weighing forty pounds each. And, in addition, the batteries weigh another twenty pounds each.
- Two PRC-14 UHF radios for ground-to-air communications, weighing thirty-five pounds each. The antennas for these sets fit onto the metal helmets of their operators.
- Three PRC-10 ground-to-ground "walkie-talkies," weighing twenty pounds each.

Additionally, there is the portable weather station, which weighs ten pounds, and special equipment for converting the rotating homing beacons for infra-red signals, for use on night missions. Instruments aboard the troop-carrier plane can spot these otherwise invisible infra-red flashes at a distance of at least five miles and home in on them.

Captain Nightingale checks to see that S/Sgt. Jim McGonigal is hooked-up

Also, on any jump, several of the men carry sixteen rolled-up panels each. They are red on one side, white on the other, and when unrolled are eighteen feet long and three feet wide. Spread out in pre-arranged patterns, they are easily spotted from the air for identification and signals. Three cases of red and white smoke grenades, each case weighing some forty pounds, are also carried on each jump.

Just as all equipment is doubled so is each control team's manpower. There are seven positions on each team, but fourteen men to a team. Number one, of course, is the team commander, either a captain or a lieutenant. He coordinates everything. He stays at the impact point.

Number two, an NCO, is assistant team commander and is usually delegated to mark the timing point. This is the most important job of the mission for it is from this spot that the planes start their run in on the target. This timing point, depending upon local terrain and conditions, is located 500 to 2,500 yards from the actual drop zone.

Positions three and four are for the radio operators. One of the operators is also a radio mechanic. Position number five is a full-time radar and radio mechanic, and positions six and seven are alloted for two extra radio operators and control tower operators. Each man is trained, though, so that his job is interchangeable with any other.

The record of any Air Force combat control team in setting up all this gear and getting it into operation is a fast seven minutes.

(Continued on following page)

Out they go. From only 900 feet up, it takes less than a minute to land.

Part of the men set up radio equipment as man at right contacts rest of team.

Above, S/Sgt. Delta P. Prosser makes first radio contact shortly after hitting the ground. Members of control team don't fight unless they have to.

Below, radioman sets up equipment as team leader scans countryside. Smoke is signal for the team to assemble.

Panels, white on one side and red on the other, are spread on the ground in pre-arranged pattern in order to communicate with other incoming aircraft.

"However," Captain Nightingale stressed to me, "twenty to thirty minutes is a more realistic time for completing the operation."

Having set up their equipment and successfully acted as "pathfinders" for the actual drop, the control team stays on the job to direct the dropping of infantry equipment and supplies. Then, when a field is carved out to receive assault planes, the first craft to land brings along a mobile control tower. With this, the team is really in business, controlling all take-offs, approaches, and landings. Members of the team not actually engaged in running this mobile tower or making weather observations have the job of supervising the air evacuation of wounded.

One of the most distinctive things about the combat control teams is their uniforms. Their two-piece green fatigues and paratrooper boots are topped off with a navy blue baseball cap, which they have special permission to wear. The newly authorized Air Force paratrooper wings are worn on this cap and each unit usually has a flashy squadron insignia worn on their jackets.

The combat control teams came into existence in 1953 when the Air Force took over the Army's pathfinder mission.

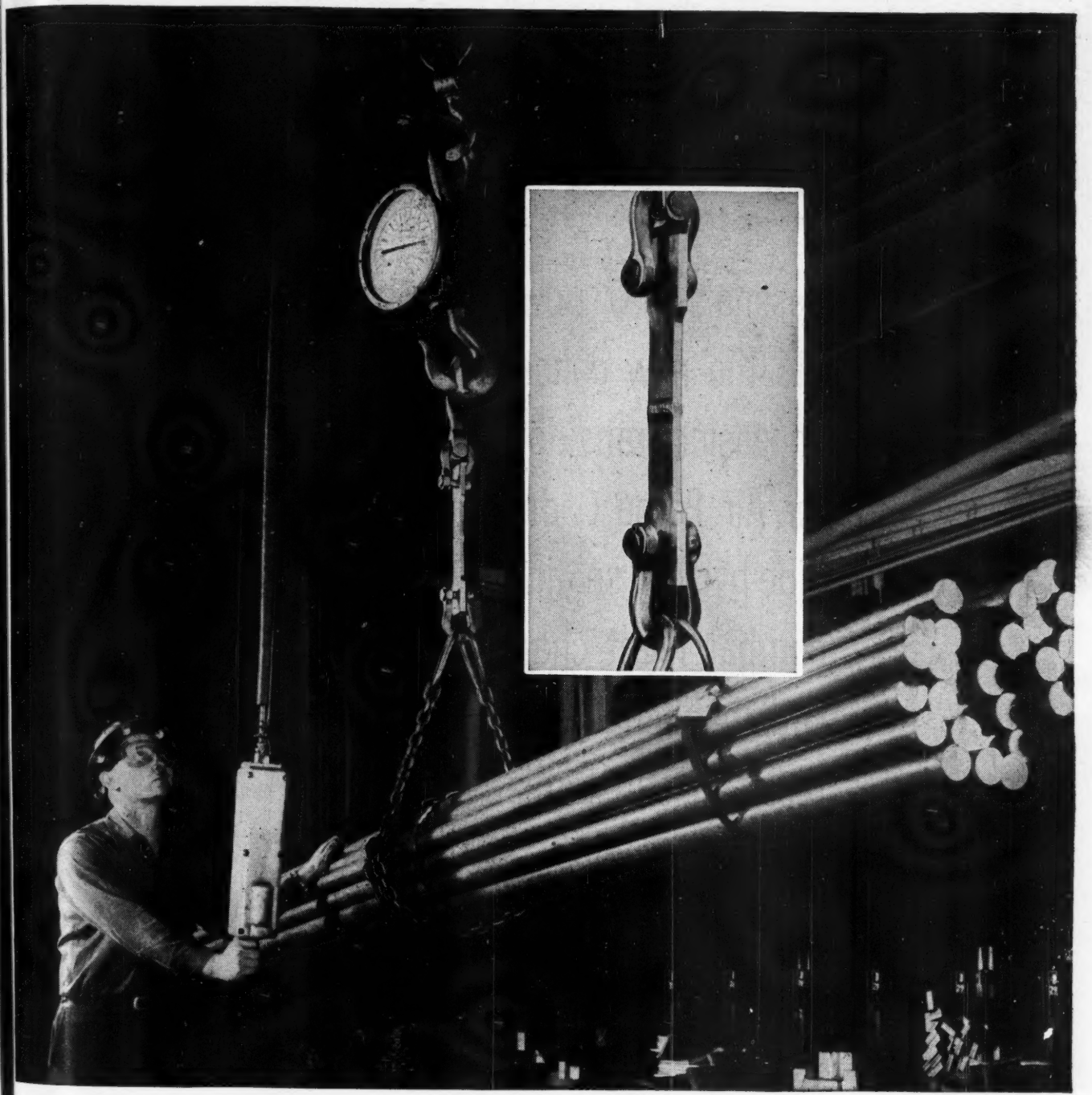
Most of the members of the teams today are ex-infantry jumpers, but more and more volunteers from Air Force ranks are joining up. After volunteering for combat control team duty and being accepted, prospective controllers go to the Army parachute school at Fort Benning, Ga., for four to six weeks. In addition, they receive special training in their specialty—controller, radio or radar operator, or electronics mechanic.

Morale among combat control team members—their average age is only twenty-three—is extremely high, despite the dangerous nature of their work.

"After all, it's a mighty interesting job," one of them told me. "And you do get into combat first."—END

ABOUT THE AUTHOR

Jim Winchester is a feature writer for King Features Syndicate-N. Y. Mirror Magazine. As a war correspondent in WW II, he figures he hit 87 countries. His most recent article for us was "Mrs. Hubbard's Giant Cupboard," in our November '56 issue. Earlier he'd done "Capt. Jean Gallagher – USAF Nurse" (October '56), and "WAF's in Paris" (August '56).



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BEHIND Britain's New DEFENSE POLICY

Economic pressures have forced Britain to take the long jump from conventional forces into the nuclear missile age before either her Allies or the missiles are ready. Some money will be saved but more important to the British are the projected savings in precious manpower. Here is the reasoning behind this serious calculated risk as presented by one of Britain's outstanding military analysts.

By Norman H. Gibbs

PROFESSOR OF HISTORY, OXFORD UNIVERSITY

IN ITS annual Statement on Defense, issued at the beginning of April, the Conservative government outlined its plans for Britain's defense policy over the next five years. These plans are not in substance "revolutionary." They carry to their logical conclusion a series of decisions which have been made since Sir Winston Churchill first announced Britain's intention to manufacture thermonuclear weapons two years ago. But they do so with a startling honesty which, while it on the one hand reassures those who have complained of too much wavering in the past, on the other hand, shocks many, both at home and abroad, who have ignored or not understood the logic of Britain's defense position. What is more, Britain's defense problems are, on a small scale, those of the West as a whole. Therefore, the greatest value of this White Paper is that it should prompt more honest and successful thinking about the whole problem of the defense of the West; its danger is that, if misunderstood, it may do the very reverse.

Two sets of problems lie behind the decisions which Mr. Sandys, Minister of Defense, has just announced—the first political and economic, the second military. The two are so closely interwoven that to decide which to describe first is like facing the perennial problem of the chicken and the egg. The economic problems are deep-rooted. Up-to-date Britain has been spending about one-third of its annual budget and ten percent of the gross national product on defense, a higher proportion of both than any other country in NATO except the United States. The defense effort has been taking one-eighth of the output of our metal-working industries and two-thirds of our entire national expenditure on scientific investigation and development. It's nonsense to argue that a defense budget of £1.6 billion ($4.48 billion) a year has crippled Britain's economy and prevented any rise in our standard of living. In 1956, for example, both overseas trade and personal saving showed a clear improvement. But, since 1945, we have had repeated balance of payment crises and are at the moment still in a period of credit restriction. We face persistent price inflation; recent strikes have by no means solved our labor troubles; and the cost of a highly developed social security program is constantly rising. Like any other democracy, Britain faces the problem of how much to sacrifice of those things it wishes to defend in order to make the defense of the rest possible. What is more, Suez showed beyond a doubt that our spending on defense so far had far less than the desired result. The government has, therefore, been under pressure for well over a year to reduce its expenditure on defense and to spend what it does spend more profitably.

The military problems are those posed by weapon developments of recent years, chiefly the megaton bomb and the application of atomic techniques to a whole range of what were conventional weapons and are now loosely called "tactical atomic." Can Britain afford to have these weapons? Can she afford not to have them? Above all, can she afford to have both the new weapons and also the whole former range of conventional weapons together with the military manpower they demand? Here, again, Britain's problem is obviously not confined to herself alone.

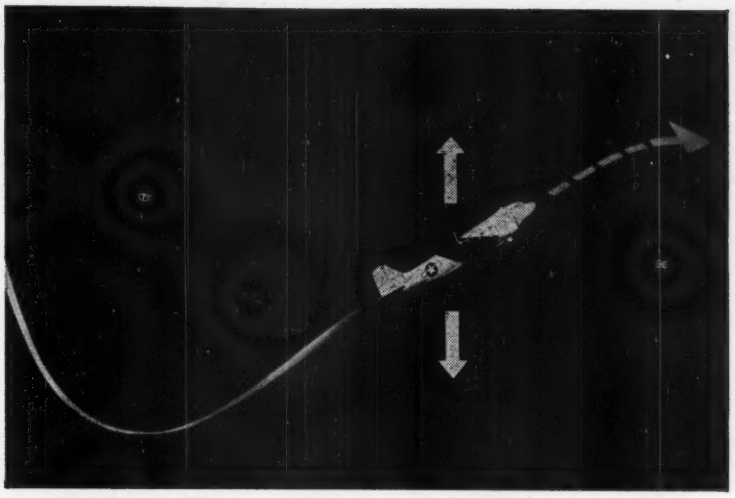
Mr. Sandys's solution is to save a little money this year with the hope of a little more later on, to promise a far greater saving in manpower than in money by abolishing conscription; and to plan to equip Britain's smaller but increasingly professional forces increasingly with nuclear weapons. All these are closely connected. Conscription has long been admitted to be the one item that prevented economies in the defense budget and, said the Prime Minister in the House of Commons, "short of general disarmament, ending conscription must depend on the acceptance of nuclear weapons."

The saving in simple money terms is acceptable but limited. The defense estimates for 1956-57 were £1,600,000,000. With the old plans they would have risen to £1.7 billion ($4.76 billion) for 1957-58. In fact, Mr. Sandys has cut that total for 1957-58 to £1.483 billion ($4.152 billion). Already there have been some tax concessions as a result of this. But the country has been clearly warned that it should not expect vast reduction in defense expenditure in sub-

(Continued on page 63)

Weightlessness — *What it is and what Douglas is doing about it*

When man invades outer space where neither normal gravity nor atmosphere exist, strange things will occur. Automatic functions—swallowing or even breathing—will demand the space traveller's deliberate thought. Exhaled carbon dioxide may smother him. Liquids won't flow, and undiffused sunlight will bathe him in a searchlight glare as micro-meteorites streak past at 50 miles per second. Such problems in the physiology and psychology of space travel have been an active concern at Douglas, ever since this Company's engineers—in 1946—first designed an earth satellite for the military.



To study the problem of life without weight, Douglas engineers early proposed flying a curve in which the pilot was so balanced between gravity, centrifugal force, and drag that he could experience a *weightless* state. The USAF has conducted such experiments in a Douglas C-47. The record for a pilot is now 47 seconds, although weightlessness has been survived by animals for many minutes.

Forerunner of a practical space suit is the Navy's T-1 high altitude suit, designed by Douglas engineers for test pilots who undergo forces where a 200-pound man weighs more than half a ton and at altitudes where his blood would boil. The T-1 which has undergone pressure chamber tests equal to an altitude of 20 miles up, is only one of the projects completed at Douglas to speed the day when man will travel through space.

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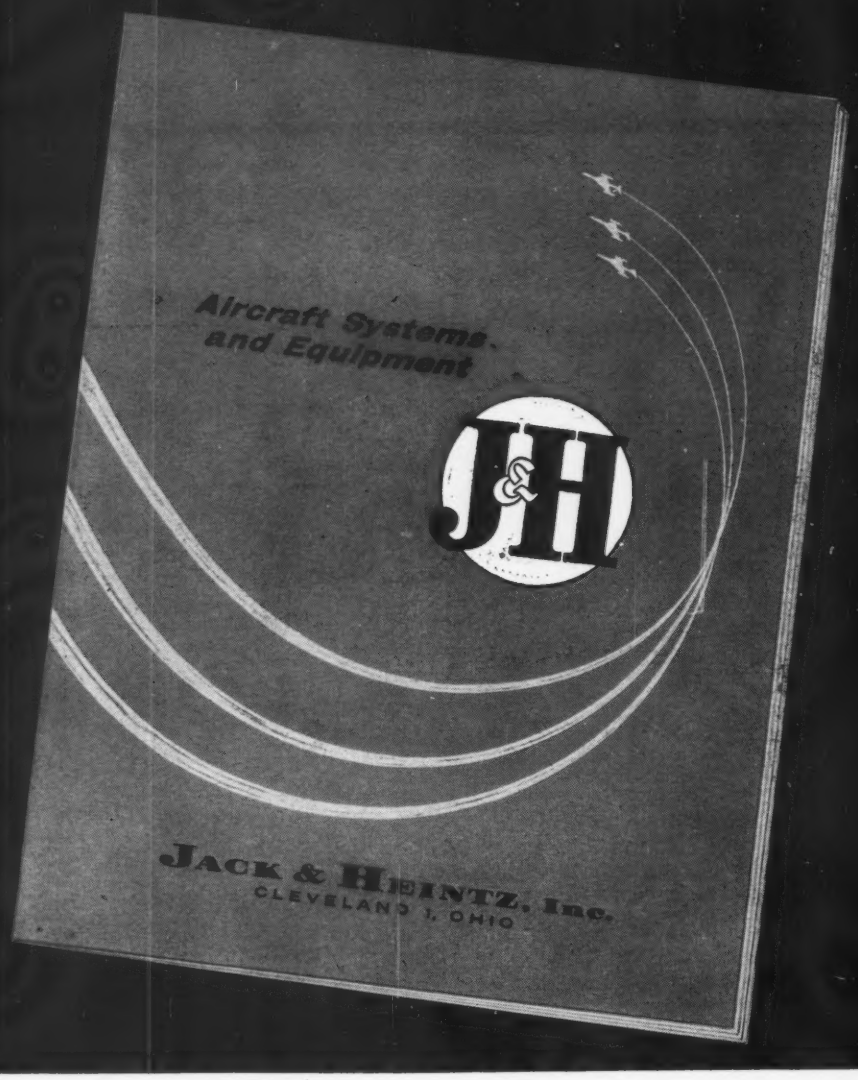

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sequent years. The cost of smaller forces will not necessarily be much cheaper in money terms. New weapons are expensive both in the research that makes them possible and in production. Substantial saving is to be made not in money but in men.

Britain, at the moment, has approximately 700,000 men under arms, of whom rather more than half are regulars on long or short term service, and the rest national servicemen. The government has now decided that the last conscript classes will be enrolled in 1960 and that conscription will end in 1962. After that the government is planning on all regular, professional forces totaling about 375,000. The Minister of Labor has said that, under the new defense plans, during the next twelve months the numbers of men employed in royal ordnance factories will probably be reduced by about 5,000; in the same period reduced military projects in the aircraft industry will set 15,000 more free; while a cut in Admiralty contracts will make another 7,000 men available for civilian industry. Further transfers will follow in subsequent years. Considering that there are at present some 60,000 vacancies in the metal-using and engineering industries, it seems that there should be productive jobs for all, both for those released from defense industry and for those released from military service. This is where the real saving to Britain's economy should be made, particularly if a substantial number of badly needed scientists and technicians are included among the men set free for non-defense production.

While conscription is being allowed to run down there will, in fact, be some form of selective enlistment; and if—as seems highly probable—voluntary enlistment does not produce the required total after 1962, selective conscription in some shape or form will have to continue. In this connection it must be remembered that a very large number of our present "regulars" are really national servicemen who have signed on voluntarily for a third year in order to get better pay. Most of these men would probably never consider the services as a long-term professional career and will not do so after 1962. Of the planned 375,000, from 1962, the Navy will take one-fifth, the Royal Air Force rather less than two-fifths, and the Army the rest. It is probable that both the Navy and the RAF will get most of the men they want; as the more technical arms, they tend to attract the volunteers. The real manpower problem will rest with the Army. Suppose Britain plans for an Army of about 160,000 from 1962. In the first place, the present rate of recruiting would not produce more than 100,000 to 110,000 per year. It is by no means clear that the others can be bought by more pay and generally improved living conditions. Secondly, even an Army of 160,000 could not possibly deal with the present list of commitments, and may well be too small for the curtailed list which the government now proposes.

Reductions in Army commitments are to be made both in Europe and elsewhere. The British Army of the Rhine is to be reduced from 77,000 to 64,000 during the next twelve months, and it is assumed that it will be down to 50,000 men by 1960. Further, there will be considerable reductions in overseas garrisons wherever possible, e.g. in Libya. As an alternative to these reductions, the government says it plans a central strategic reserve of troops in Britain which, provided with air transport, could be moved wherever needed in a short time. But if, by 1962, the Army has 50,000 men in Germany and about another 25,000 or more still in overseas garrisons, that will leave only 75,000 or so at home for all training, specialized arms, supply and staff, and the so-called central strategic reserve. In such circumstances such a reserve could hardly amount to more than 20,000 men. Even if it were provided with adequate air transport—and that is one of the big "ifs" of the whole plan—it could hardly contribute much to a Korea or Indo-China, and would be entirely inadequate either for a succession of such wars or for two or three together.

In other words, with drastic restrictions of numbers, the peripheral commitments, whether in the Middle East or Far East, are clearly being sacrificed to commitments nearer home. It is true that the White Paper specifically mentions some Middle East and Far East commitments which will be maintained, particularly as part of Britain's responsibilities under the Bagdad and SEATO agreements. Aden, East Africa, and Cyprus are listed under the first pact; Malaya and Hong Kong under the second. Moreover, a much reduced Navy has the function—indeed, according to the White Paper it is virtually its only function—of "bringing power rapidly to bear in peacetime emergencies or limited hostilities" by means of carrier groups. But a comparison of this modest list, and of the troops and ships allotted to it, with what Britain has spent in men and money in these same areas ever since 1945, soon reveals how seriously garrisons and other British forces overseas are to be reduced. And Suez showed how inadequate our plans for a central reserve, available anywhere at short notice, have proved to be so far. The phrase "imperial commitments" now arouses as much hostility in the rest of the world as it has long done in the United States. But it is worth remembering that much of Britain's recent responsibility under this head has, in fact, been part of the general fight against Communism. It is not clear who is to discharge that responsibility if Britain feels that she can no longer do so.

The military assumptions upon which the whole Paper is based are twofold. First, that since thermonuclear weapons have made of total war a business of mass suicide for both sides, then the top priority must be to prevent war by means of the nuclear deterrent, i.e. chiefly hydrogen bombs and carriers for them. Second, that particularly with a relatively small target such as Great Britain, "there is at present no means of providing adequate protection . . . against the consequences of an attack with nuclear weapons." Two years ago Sir Winston Churchill announced that Britain would manufacture thermonuclear weapons of her own which would be carried for the present by the V-bomber force. The present government has kept this as top priority. Total war is to be prevented by threatening potential enemies with retaliation which will make aggression worthless. But Mr. Sandys has gone further than his predecessors in announcing detailed plans for the next phase when ballistic missiles will replace manned bombers. An agreement has been made under the terms of which the United States will supply Britain with medium-range ballistic rockets, an arrangement which will free Britain's limited research facilities for work on later rockets of the true intercontinental type. Further, the United States is to build rocket launching bases in Britain.

One illustration of the increasing importance of the deterrent through airpower in Britain's plans is that the Air Force slice of the total defense budget has increased in relation to the other two services and is now considerably larger than that of either of them. This will almost certainly be emphasized in subsequent years as the size of the Army falls.

(Continued on following page)

The thermonuclear deterrent is the core of Britain's defense policy. British atomic bombs are already in steady production, and a British megaton weapon is now developed and ready for testing. The government has firmly resisted strong pressure to postpone that test as a preliminary move toward disarmament. Moreover, the Labor opposition, although it is in the throes of public disagreement on this issue, is, as a whole, of the same mind as the government. A few Labor members, it is true, ask for immediate nuclear disarmament. The formal party line at the moment is to ask for a temporary postponement of Britain's tests while disarmament proposals are examined. But the latter is essentially a compromise proposal; and if Labor formed a government tomorrow it is not likely that it would alter this critical part of Britain's defense policy to any important degree.

The White Paper further reaffirms what Mr. Sandys has repeatedly said, both within the House of Commons and outside it, that "the possession of nuclear airpower is not by itself a complete deterrent. The frontiers of the Free World, particularly in Europe, must be firmly defended on the ground. For only in this way can it be made clear that aggression will be resisted." Britain's contribution to NATO's land forces in Europe is therefore the other, even if the lesser, part of the deterrent. And though the size of that contribution in men is to be reduced, this, it is claimed, has been made possible by the greatly increased fire power of tactical nuclear weapons.

Under the second assumption, that no adequate defense is possible for Britain against nuclear attack, there are three conclusions worth noting. The first is that active fighter defense is to be confined to bomber airfields—though it is not clear how, with defense in depth, an enemy bomber's target will be guessed at ranges of 100 to 200 miles distance. Anyway, the towns, although they may be protected by ground-to-air missiles later on, are not going to be protected now. Secondly, civil defense is decently buried under a polite form of words; it will be provided for on a "basis on which realistic planning can continue." Expenditure on shelters and evacuation is out. Thirdly, the assumption of a brief overwhelming nuclear war leads to the conclusion that "the role of naval forces in total war is somewhat uncertain." How uncertain, in the government's opinion, is not made clear. Indeed, this is one of the least satisfactory sections of the whole paper, whether from the point of view of those who believe that sea lanes must always be protected, or from the point of view of those who think this is irrelevant within the time limits of nuclear war.

On the whole, however, this is a clear and courageous statement of policy, courageous in the sense that the government has made difficult decisions, some of which are bound to offend people at home and other friends abroad. Strategic reappraisals and economic defense have been in demand on all sides for some time past. Here is a genuine attempt to provide some of the answers. Moreover, if these answers are discussed by and with Britain's allies, they should help to solve some of the critical problems of the Western Alliance as a whole.

But there are two obstacles to this happy ending which must be fully realized if they are to be overcome. The first is that, within an alliance, no one country's problems are a law unto themselves; they must concern every ally. In this White Paper the British government explicitly admits that "the defense of Britain is possible only as a part of the collective defense of the Free World," and goes on, further, to admit that Britain can make only a "modest contribution" to the nuclear deterrent. Moreover, it is clear both that the British government has given notice to the NATO powers of its defense problems ever since the autumn of 1955, and also that these latest moves were discussed with the US President at Bermuda. Nonetheless, these moves have shocked some of Britain's allies, particularly France and Germany, and she has been accused of acting unilaterally in matters of common concern. There is a fear that a reduction of Britain's NATO forces is the first sign of a British withdrawal from the continent, despite the fact that Britain has now bound herself closer to Europe than ever before and that at some cost to her former world position.

Britain is also accused of planning to build herself up to the status of a third world nuclear power to complete a trio with the United States and Russia. This makes no sense in any case, and certainly it is nonsense when placed beside the British government's open admission that "the Free World is today mainly dependent for its protection upon the nuclear capacity of the United States." But here, obviously, is a chance to revive the charge of "perfidious Albion." In Germany, again, the federal government is now asked why Germany needs conscription if Britain does not; and let no one think that many Germans are reconciled to the prospect of fighting with nuclear weapons on German soil.

The fact is that every government in the alliance of democracies is under pressure to make defense cheaper; all of them are faced by the problem of what use to make of nuclear weapons. Either those problems will be solved by mutual consultation and agreement or the alliance must fail. If Britain is to cut out commitments she can no longer bear, that does not prove that the commitments no longer exist. All it means is that some other country may have to shoulder the responsibility. There is no need to apportion blame on this occasion. And, in any case, the British government's unilateral decisions may well force the pace of the whole alliance along the right paths. What matters is to realize that NATO and the other defensive organizations of the Free World must grow in influence or perish. There is no standing still. And if they die, freedom will perish with them. That means that matters of common interest must not be treated as

(Continued on page 67)

ABOUT THE AUTHOR

There have been significant changes in British defense thinking since Professor Gibbs's byline last appeared in AIR FORCE *Magazine. That was in our July '56 issue, when he analyzed the then-new British defense budget for our readers. Born in London in 1910, Professor Gibbs was graduated in modern history from Oxford University in 1931. In 1936 he was elected a Fellow and Tutor in modern history and politics at Merton College, Oxford. In 1939 he was commissioned in the Armored Corps, and in 1943 was assigned to the staff of the War Cabinet Office. He was appointed Chichele Professor of the History of War at Oxford and a Fellow of All Souls College in 1953. Since that time he has served on the historical staff of the Cabinet Office and has been engaged in preparing a volume of the British Official History of the Second World War.*

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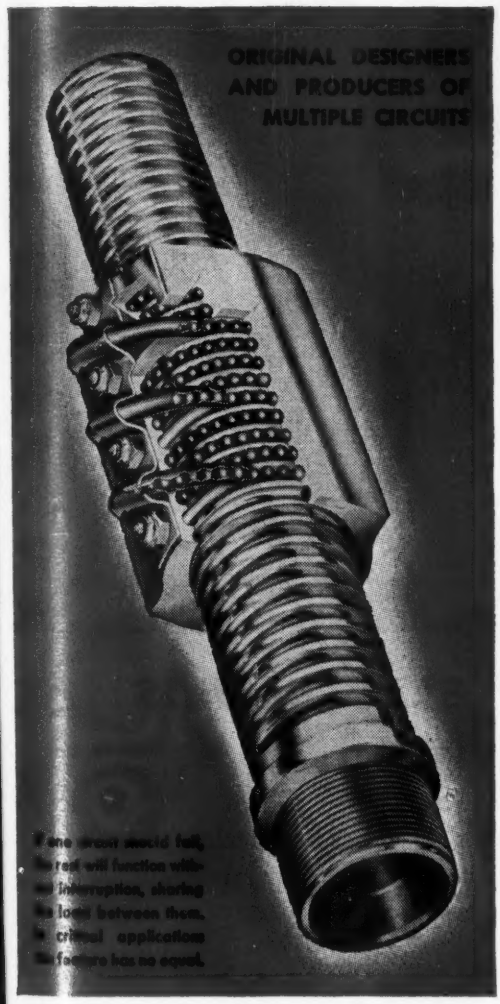

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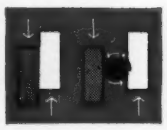

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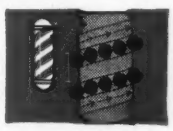

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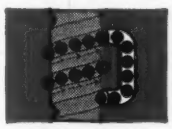

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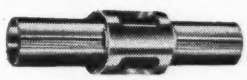

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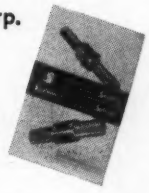

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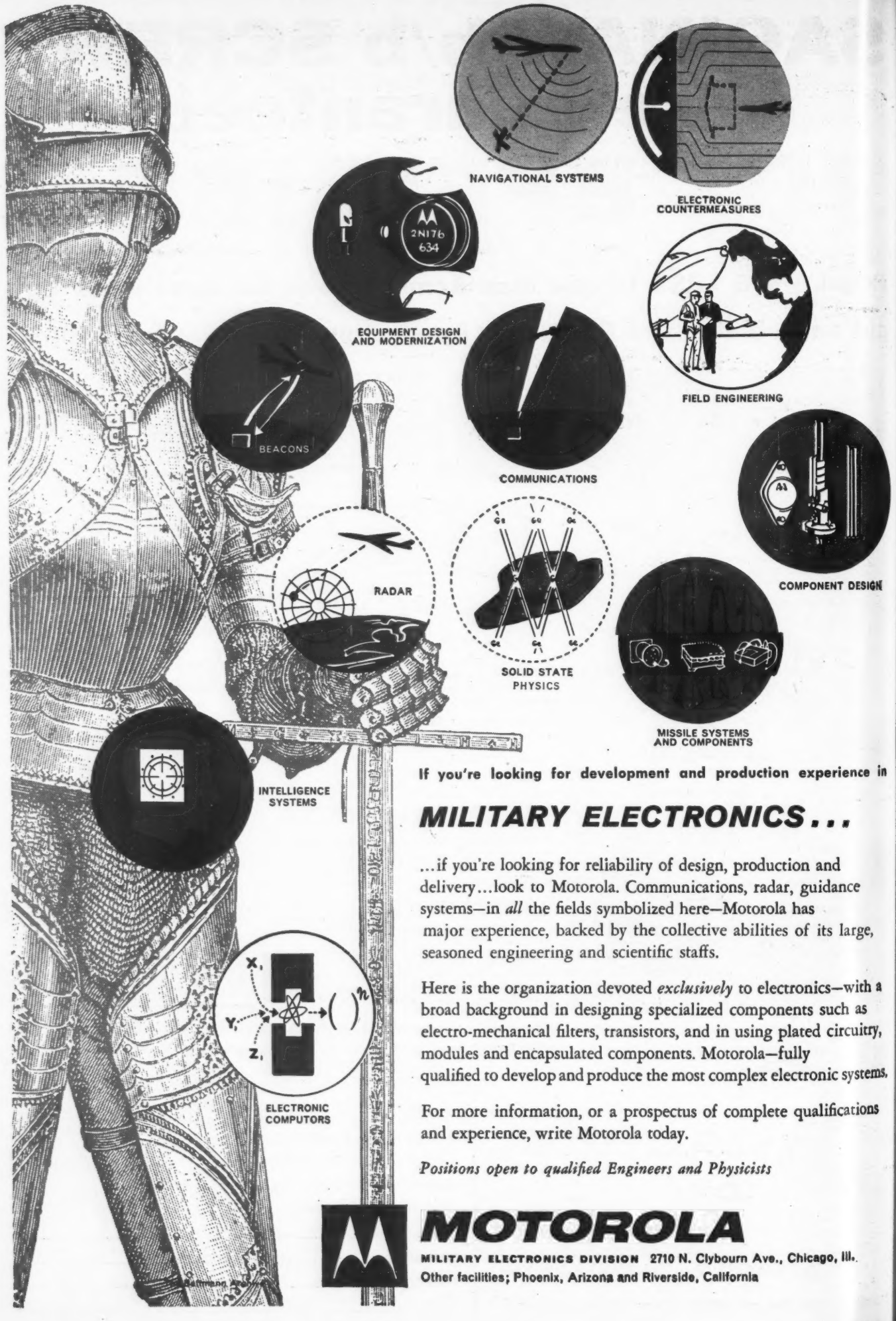

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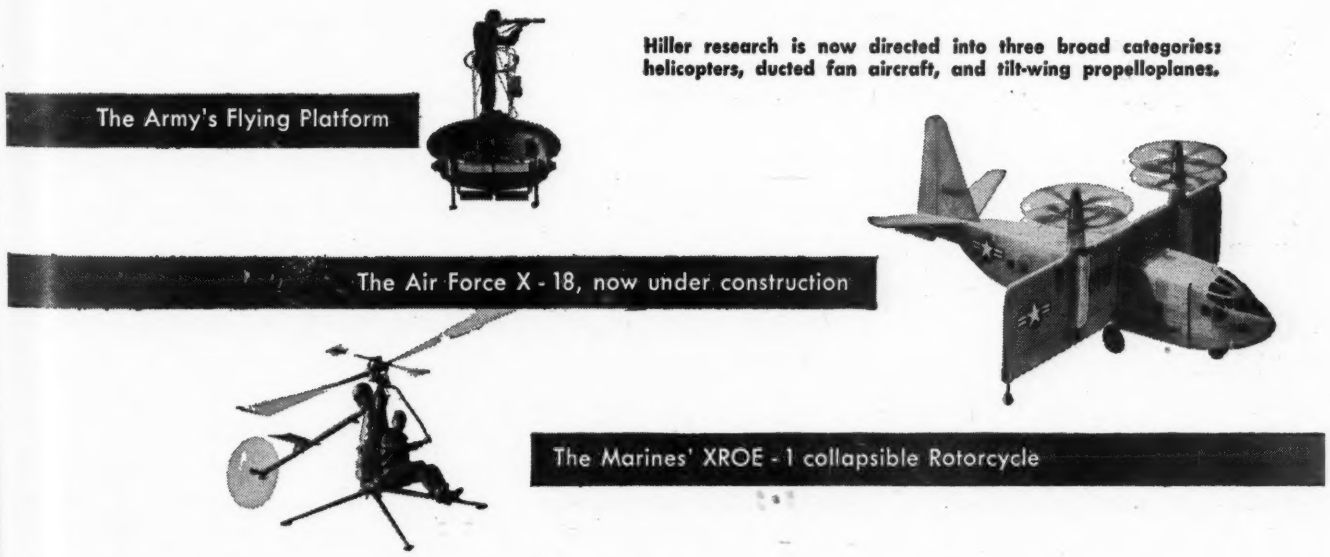
purely domestic concerns; nor must they be ignored by governments which haven't the direct domestic responsibility for dealing with them. Specialization within the alliance is implicit in any claim that no one nation can do all the jobs. And specialization means the closest consultation. In that respect NATO has already made progress. But there is a great deal further to go.

The second problem arises from the nature of the weapons with which the British government is increasingly determined to arm its forces. It is the decision upon the weapons, the Prime Minister has said, which "governs the whole issue." There is a wide measure of agreement among both government and opposition that Britain's safety and that of her allies can, in the present state of world politics, be endured only by the Great Deterrent. Moreover, nobody can deny the government's claim that only a rearming with nuclear weapons will make a serious reduction of forces, and therefore the abolition of conscription if that is what is wanted, possible. What is a source of anxiety to an increasing number of people, more, perhaps, on the Continent than in Britain itself, is the fear that Britain and her allies may ultimately so depend on nuclear weapons that they will have no other way to fight wars, even limited ones. After all, we have commonly argued that the more successful the Great Deterrent is in persuading Russia that all-out war is not worthwhile, the more she will be diverted to lesser adventures. "It is the local conflict that is the real danger," said *The Times* in a leader on the White Paper. "The deterrent against the local conflict is therefore the root of all deterrence." Is it possible that lesser wars be dealt with by major weapons without leading to major wars?

This is a subject of great complexity and one capable of arousing bad temper. But, assuming that wars of some sort will happen again, and that wise men will want to make war serve the ends of politics, there are some points worth considering. The first is that Britain's claim that she cannot provide for every military eventuality is a perfectly genuine one. Moreover, that is equally true of any member of the Western Alliance, including even the United States. Secondly, it surely cannot be argued either that NATO wishes to turn every war into a major one, or to surrender limited objectives for fear of doing so. And it should be remembered that, one day, the possibility of limited objectives may occur in Eastern Europe as well as in the Middle or Far East.

These two assumptions put together imply a wider range of weapon equipment throughout the alliance as a whole than Britain is aiming at for herself alone. But if the retention of conventional weapons is desirable for complete defense, then defense cannot be cheap. The cost must be high either in money terms or in the sacrifice of national pride which specialized and limited functions within the alliance may involve in order to make a wide variety of armament possible. The defense of freedom is one and it involves action all over the world in a wide range of conditions. Adequate defense, where ways of life are at stake, is not a matter of priorities. Either we have all, or none. But "all" can be achieved only by such a strengthening of the free alliance that important unilateral decisions, by any government, will no longer be necessary.—END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Freedom takes on new meaning to those who've been denied
This youngster's whole life had been under Communist r

Operation Safe Haven

AIR BRIDGE TO FREEDOM

By Milton Krims

This month the Military Air Transport Service celebrates its ninth birthday. The statistics compiled since 1948—4,500,000 Army, Navy, and Air Force passengers, 850,000 tons of cargo and mail—are impressive, but they don't tell the whole story. They don't, for example, tell the human story of the Berlin Airlift—MATS's first big test. Nor do the routine entries of countless flight logs do justice to Operation Safe Haven—the airlift this winter of 9,700 Hungarian refugees to a new life in this country. To tell this story in terms of the people who took part, we asked Hollywood screenwriter Milt Krims to cover Safe Haven for us. His moving documentary follows.—THE EDITORS.

OCTOBER 23, 1956. No Hungarian knows why this day will be different from any other. He wakes with the same weariness, feels the same dull hatred for the Russians, carefully tucks it away behind a belly full of resignation, and goes to his work. But he never gets there. Students are marching in the streets, singing the old forbidden songs, shouting forbidden words.

Suddenly the day is different; the air is full of exciting sounds unheard for twelve terror-filled years. No man goes to work on a day like this. He follows the marching students, joins in the songs, stands with the others in front of the Budapest radio station to wait while a delegation of students requests permission to broadcast its demands. And when the hated secret police, the AVH, shoot into the students, he runs with the thousands of others. For none of them has arms, and they cannot fight back. A thousand are killed.

But he lives, and his belly will take no more, and he gets a gun from the arms depot liberated by the Hungarian soldiers and becomes a "freedom fighter." For five days he has delusions of victory. Five days . . . and then, on November 4, the Russians return to crush the revolt with traditional savagery. Thousands more are killed and wounded; thousands more are sent to Russian slave labor camps.

Of those more fortunate, many wearily gather a few belongings and flee their homeland. They become refugees, with no place to go but out of Hungary, over the border into hospitable Austria.

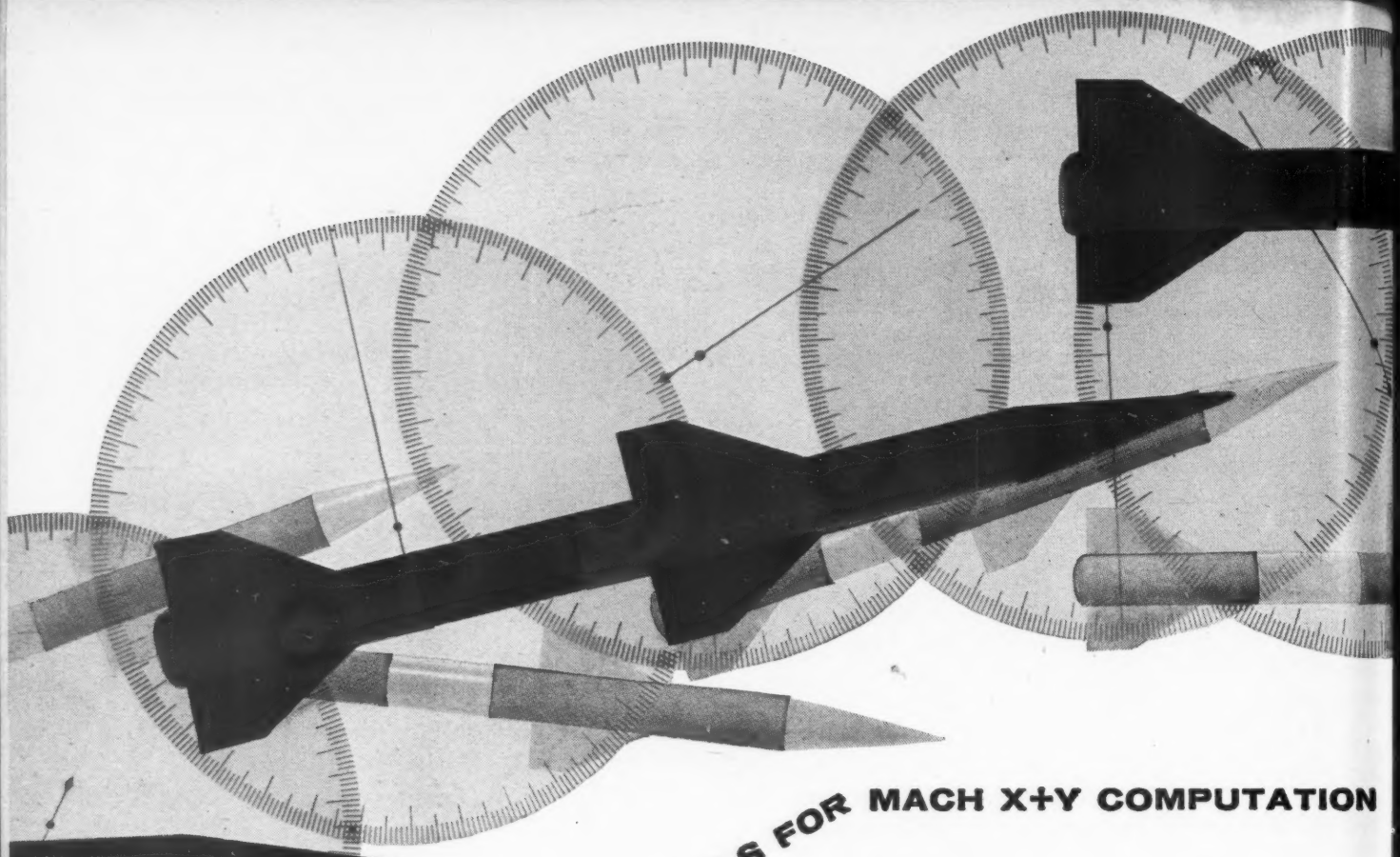
ICEM (Intergovernmental Committee for European Migration) was the first official relief agency to take over the refugee problem. Created in 1952 to assist migration of refugees and nationals from enslaved or overcrowded European countries, it had already moved more than half a million people to new homes overseas. It quickly and efficiently established larger offices in Vienna and was ready for business almost as soon as the first Hungarian refugee crossed the Austrian border.

In response to an ICEM appeal, twenty-four governments offered haven to the Hungarians. The United States agreed to accept 6,500. There were only that many visas left of those provided for in the Refugee Relief Act of 1953. This number was processed by ICEM, granted visas by the American consul, and by November 20 the first load of refugees was flown to the United States in a commercial aircraft chartered by ICEM. By this time the refugees were coming over at the rate of 2,500 a day.

This is the Canal. Thirty meters wide, on either side an ominous, bleak, snow-shrouded flatness, sparsely spotted with spidery, leafless shrubs. On the Hungarian side—very close—is a watchtower set high on stilts, black against the gray sky. There is nothing on the Austrian side . . . not yet. The sun will set in about an hour, and as night comes to the Canal, the hard silver of the sky will turn gray and finally black. It is cold now, but it will be much colder.

Many people will come to this Canal. Hungarians desperately reaching for life and freedom. Free people of the

(Continued on page 71)



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THE FOREMOST NAME IN COMPUTATION

Western world—American, English, Swiss, Norwegian, Austrian, German—will come to help them. There is no profit for them since they are unpaid, no glory since they are anonymous; their names will be known only if they are caught on Hungarian soil. Yet they will be at the Canal waiting.

It is still November, and for some never-explained reason, the Russians are doing nothing to close the border. The flow of refugees is almost a parade to freedom. On the Austrian side there are great bonfires, and Austrian flags are lighted by headlights, and buses wait to carry refugees in some comfort to camps where they will be fed and sheltered and started on whatever road they choose from there on.

Time and time again they say, "We could have beaten them ourselves if only you had sent us arms and ammunition."

Ask them why they left and many answer, "To live to go back again." Their eyes tell you they are speaking the truth.

There is little joy in them when they come across the border to safety; they are quiet and they always look back as they are being taken away.

They are mostly young . . . and their youth gives the lie to the Soviet legend, for they have never known anything but Communism. But they have listened too many years to Communist propaganda, and they are still suspicious of kindness. One rejects Coca-Cola because he has been told it contains a drug that dulls the mind to make it more submissive to capitalistic slavery. Many eat only a small part of the food given them, cautiously hiding the remainder because they are afraid they will not be fed again. And they gulp vast quantities of coffee. One says, "I have drunk more coffee tonight than I have in the past year."

Many have never before seen an orange or a banana, and the shoes and clothing so freely given are the equivalent of a year's work.

It is almost too much to believe, and they will be suspicious of both the plentitude and the generosity for days to come. And they worry constantly about relatives and friends left behind. But still they come over by the thousands.

Austria is a small country with only 7,000,000 population. The influx of 100,000 refugees within three weeks increased the Austrian population by more than one percent. It was as if the population of the United States had suddenly increased by 1,650,000 people, all jobless and hungry, mostly destitute and many in need of immediate medical care. Even here, such a circumstance would have created an immediate social and economic strain. Little Austria could not possibly absorb that many people; unless they were moved out to other countries they were doomed to jobless idleness in refugee camps. The refugees themselves did not want to remain in Austria. Nor, let it be said, did all of them want to come to the United States.

On December 1, the Military Air Transport Service (MATS) was warned it would be required to activate an airlift for Hungarian refugees. No sweat. Since June 1, 1948, MATS had airlifted some 3,868,427 passengers more than 10,000,000,000 miles. In a little more than eight years, MATS transport planes had crossed the oceans more than 100,000 times, averaging an Atlantic or Pacific crossing every forty-eight minutes. MATS was ready . . . but of necessity there were many questions.

From where to where? Nobody was quite sure. Austrian airports would of course be best since they were

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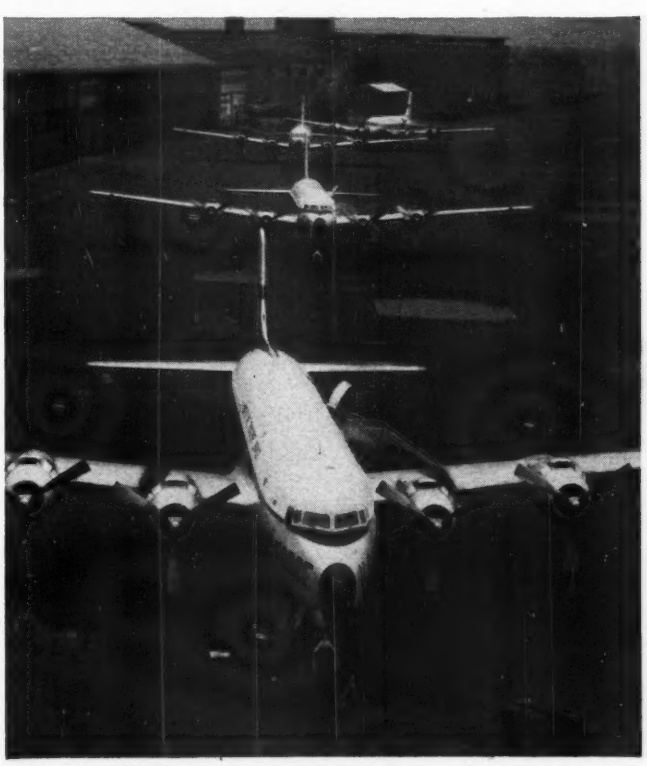
Even President Eisenhower's plane, "The Columbine," got in the refugee act. Here's pilot Draper and a customer.



Douglas C-118 transports line the ramp at Munich Reim Airport, ready to airlift Hungarians to a new life in the US.

A cup of milk is a welcome treat to young Peter Gurdon during his stopover at Luitpold before flight to the US.

AF M/Sgt. Adolph Paoli is openhanded with the milk and cookies at Luitpold, one holding point for the refugees.

closest to the refugee camps. But the peace treaty guaranteed the neutrality of Austria. Would the Russians consider the landing of US military aircraft on Austrian territory a violation of Austrian neutrality? Possibly . . . since they took a dim view of anyone who ventured to wonder why the Hungarian proletariat needed to be slugged into enjoying the workers' paradise. Perhaps the problem could be solved by dressing military personnel in civilian clothes. But MATS safety standards require that GCA equipment be available wherever its aircraft land. This meant military equipment as well as personnel on Austrian territory.

This, too, might have been overcome had it not been finally decided by MATS's Atlantic Division that Austrian airports presented too many logistical, maintenance, and operational problems. Rhein-Main, in Germany, was the second choice, but it was a long way from Austria. The Munich area was considered next. There were two airfields here—Neubiberg Air Base and Munich Riem civil—both excellently equipped for safe operation . . . and only eight hours by train from Vienna or three hours by bus from Salzburg. Munich Riem was chosen. Now MATS was ready with the point of onload.

Now it is December, and the young men are using a boat to ferry refugees across the Canal. First there was a bridge to make the crossing easy. Much breathlessly sentimental melodrama was written about the "Bridge to Freedom," and the photographers lighted up the night—and frightened the refugees—with their flashbulbs. So one day, annoyed by the publicity, the Russians seeded the bridge with dynamite and blew it to jagged pebbles.

The young men then built a narrow bridge of wood. The Russians quickly destroyed this wooden bridge. Now the word is out that the Canal is no longer the best place to cross, and traffic is gradually decreasing.

But they are still coming, and they must be brought across somehow for the water is deep and cold and the air is freezing. So each night the boat, an old, dirty yellow rubber dinghy, is brought to the border. The young men carry it through the snow to the bank of the Canal, then post themselves to watch the darkness on the other side.

Patiently, silently, they wait for a shadow to stir, listening for the sound of a footstep, a hushed voice. Occasionally a red or white flare arches from the Hungarian watchtower to spread a cold, ominous light over the frozen ground. Dogs bark in the distance. The cold hurts. It also hurts to think of the human beings under the light of the flares, especially when a machine gun chatters loudly in the night.

Now there is a stirring on the Hungarian side. The young men launch the rubber dinghy, one paddles it across to Hungary. A group of four men, three women, three children. The children are limp in the women's arms, drugged to sleep to keep them quiet. Two trips will be necessary. The young man quickly ties a rope around a stronger shrub or hands it to one of the men. The other end is tied to the boat. The instruction, almost always in pantomime for only one of the young men speaks Hungarian, is to pull back the boat with the rope when it has been unloaded on the Austrian side, then paddle themselves across.

The young man will not return, not because he is afraid but to avoid "international incidents." They move swiftly, as silently as possible. One load, another load. The others hurry the numbed people to the kitchen truck where they are given hot drinks and food.

Only one man remains on the other side, and he silently vanishes into the darkness of Hungary. He is the guide and

(Continued on page 75)

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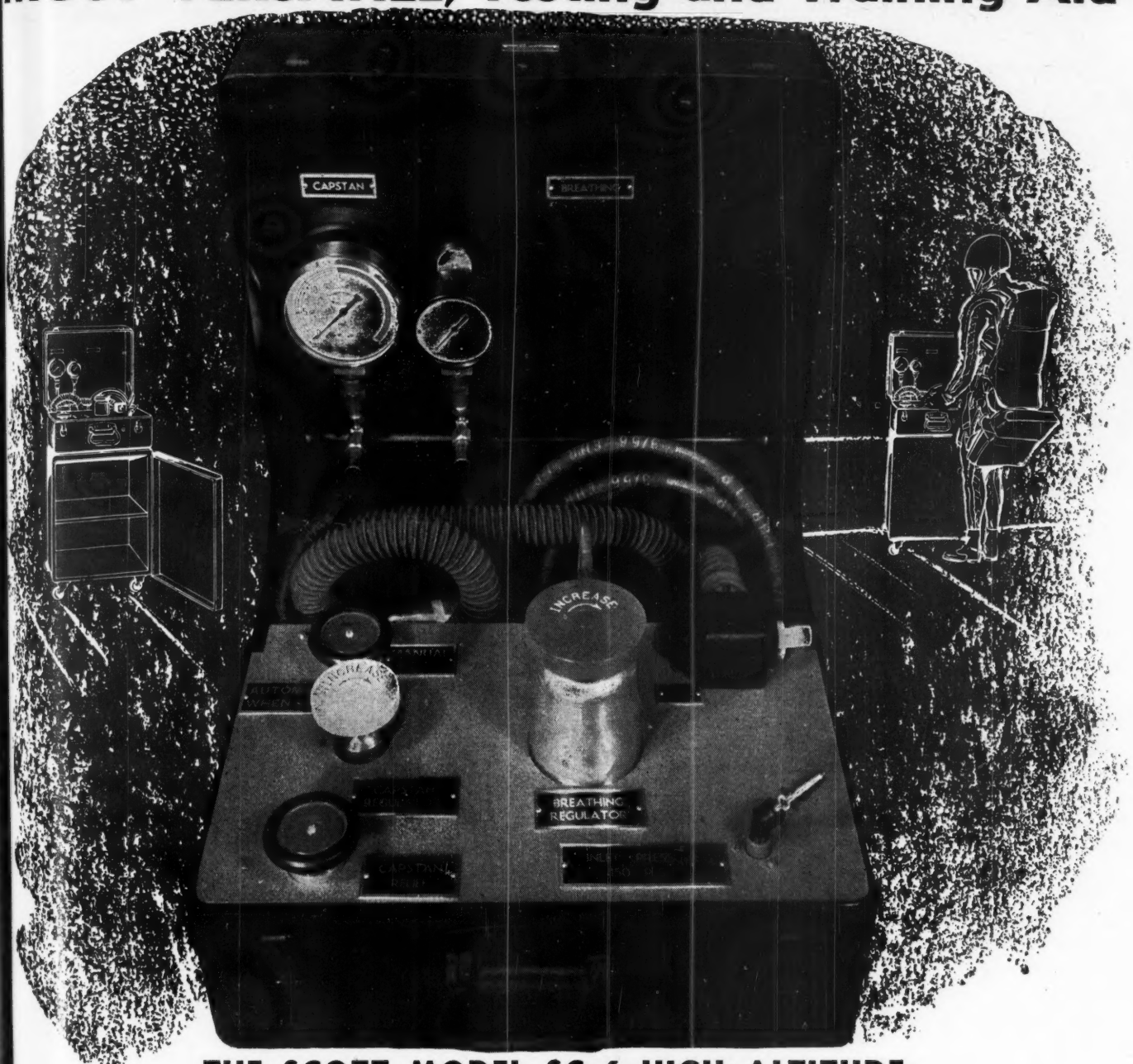

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Faces of freedom. For some it's difficult to leave everything behind, but for all there's the promise of a new life.

Dr. Laslo Jakob with his wife and their children wave goodbye as they board for their freedom flight to McGuire AFB.

AIR BRIDGE TO FREEDOM — CONTINUED

he will come again and again and then he will not come again ever.

Five boats have been lost . . . and two of the young men. But the refugees must be ferried across the Canal . . . and there are no statistics available on the number of passengers.

Christmas was a few weeks ahead, and the "Home-by-Christmas" airlift for leave personnel must not be interfered with or slowed down. Would it be necessary to use commercial contract carriers? Good pilots think ahead of their aircraft. Good planners were now trying to think ahead of their government. But as of December 1, only the Hungarian refugees knew where they were going, although they were not too sure of getting there. Except for certain top brass, Air Force personnel scattered all over Europe, North Africa, and the United States were minding their own business which, it can be assumed, was mostly concerned with the upcoming holidays.

The Hungarian refugees were creating sympathetic discussion, but that was somebody else's problem. They didn't know that a plan based on the highest possible requirements was in the making; nobody told them about unrestricted depot supply support, instantaneous communications, realignment of en route prepositioned stocks, and personnel augmentation at high-density en route stations. If they had known, they might have changed their Christmas plans.

In Austria, the roads to the border are little more than snow and ice-filled ruts twisting across flat, fallow fields. One must be careful not to lose the way and wander into Hungary. Those lights to the right are Hungarian lights. But the Land Rover, a British vehicle, is moving away from the border toward the Austrian village of Andau. The headlights shadow the wrinkles in the road. The vehicle writhes and bumps, but the passengers jammed tightly inside do not complain. This is comfort compared to what they have recently experienced. They ride silently, perhaps because there is too much to say and they are still too tired to speak. And no one urges them to speak.

Suddenly the driver, a mustached Englishman, leans forward the better to see though the frosted windshield. The headlights show two boys with their thumbs raised in the universal request of the hitchhiker. But the border is a long way back, and there is nothing here, not even a farm. The driver stops the Land Rover, gets out and is greeted with a torrent of excited Hungarian, not one word of which he understands.

The refugees climb down from the rear of the vehicle, cluster around the two boys, neither more than twelve years old. The boys talk, and the women soon begin to shake their heads reprovingly, and the men try to hide their smiles. The Englishman and the two Americans with him try desperately to understand. And now the women cluck, and the men roar with laughter.

An ex-English professor from the University of Budapest translates. "Their home is in a small town not far from Budapest where they are still fighting the Russians. Their mothers warned them to stay off the streets, but they disobeyed and were soon behind a barricade fighting the Russian tanks. Several times older men ordered them home, but they were not afraid; they fired the rifles they took from dead men, they threw Molotov cocktails with the rest. They claim to have destroyed three tanks." He chuckles.

"Then at last came the moment of terror. One grasped the other's shoulder, shouted, 'Look, Fedor, look!' Their mothers were hurrying toward them waving large sticks. They ran . . . and they are still running, wanted by both their mothers AND the Russians!"

It is some twenty minutes later and they are again bouncing over the unfriendly road. The Englishman shakes his head.

On December 1, 1956, AF Brig. Gen. George B. Dany was designated Task Force Commander of an operation that on that date was without a firm commitment of any kind. By December 6, the same day President Eisenhower announced the Emergency Admission program, General Dany flew to Europe; on the morning of the seventh he was in Prestwick, Scotland, reviewing plans for the disposition and utilization of the augmentation personnel already on the way to Prestwick from McGuire AFB, N. J. Control team personnel were already en route to Rhein-Main. By late afternoon General Dany was in Wiesbaden, Germany, conferring with Lt. Gen. William H. Tunner, Commander-in-Chief, US Air Force, Europe, about logistical support.

The Air Force could move now because it had gotten

(Continued on following page)

The ragged youngster shown on page 69 bears a striking resemblance to this little girl, now all in new clothes.

the word. ATLD Operations Order Nr. 73-56 was already distributed. Officially MATS was committed to airlift 9,700 Hungarian refugees from Munich Riem to McGuire, 3,200 of these to be transported by commercial contract carriers. "A-Day" was December 11, and the airlift was to be so scheduled that all passengers would arrive in the United States no later than January 1, 1957. The nickname assigned to the operation—"Safe Haven."

But there were still problems. Granted, as the US Ambassador to Austria, Llewellyn Thompson, optimistically stated, the passenger flow could be built to 1,000 a day. Granted, as MATS knew from experience, given reasonable flying conditions it could airlift that many. But European weather is seldom reasonable in December; in fact the weather people were already making pessimistic forecasts.

What would happen to all these people en route from Austria to Munich Riem if weather-grounded aircraft could not immediately continue the journey to the US? Ambassador Thompson suggested that MATS contract carriers be diverted into Vienna for refugee pick-up. Both MATS and ICEM rejected this as undesirable. The one acceptable solution was to establish a holding facility in Munich.

Through USAFE action, CINCUSAREUR (Commander-in-Chief, US Army, Europe) issued directives to Maj. Gen. Gordon B. Rogers, Commander, Southern Area Command (SACOM), US Army, Europe, to provide the necessary facilities. Two old German Army barracks—Luitpold and Hohenbrunn—were designated as holding points. Firm figures on daily flow would be determined later. But please not too much later, since this was the night of December 8, and it was desired that all facilities be ready by the afternoon of December 10 to receive the refugees who would depart for the US on December 11, "A-Day."

Now that a firm operational flow plan was finally available, Super Constellations from Charleston AFB, S. C. (1608th Air Transport Wing), were diverted from North African cargo runs into passenger runs. All C-118s were returned to passenger configuration. Tactical Air Command was directed by Air Force to undertake the 3,000 flying hours thus diverted from the North African and UK-European cargo channel traffic. MATS in turn diverted residue channel lift requirements to commercial contract carriers. Routing was established as follows:

ATLD C-118/R6D aircraft: McGuire AFB to Ernest Harmon, Newfoundland (refuel) to Prestwick, Scotland (crew change) to Rhein-Main, Germany, to Munich Riem (onload, one hour ground time) back to Prestwick (crew change) to Ernest Harmon (refuel) to McGuire (offload).

ATLD C-121 aircraft: Charleston AFB, to Lajes Field, Azores (refuel) to Rhein-Main (crew change) to Munich Riem (onload, one hour ground time) to Lajes (refuel) to McGuire (offload) to Charleston.

Augmentation personnel was already moving from Charleston and McGuire to Lajes, Prestwick, and Harmon. The aircraft were ready and waiting for orders to proceed to Munich Riem. But Munich Riem was not yet ready to receive them.

USAFE was committed to maximum logistical support. Part of the civilian Munich Riem airport had to be converted into a military installation . . . within two days. This meant space for offices, operation and communications section, a mess hall, an air police post, a press center. Aircraft maintenance and parking facilities needed to be located, and additional electrical power contracted for.

Equipment and supplies, everything from chairs to fire-

During the airlift, families with small children received special attention all the way from the Hungarian border.

trucks, moved in from Erding, Furstenfeldbruck, Kaufbeuren. Freising supplied a 100-kilowatt generator that later became the emergency power source for the GCA unit. Telephones were borrowed from the Army, which in turn borrowed the necessary telephone spares from the *Deutsche Bundespost*, which also provided all the teletype equipment. An O-10 crash vehicle with crew arrived from Neubiberg. Meanwhile, the 317th Food Service Squadron was setting up the Safe Haven dining hall, eventually to serve some 5,500 meals.

As more Hungarians moved across the border, more Americans moved toward Munich to help them—C-118 spe-

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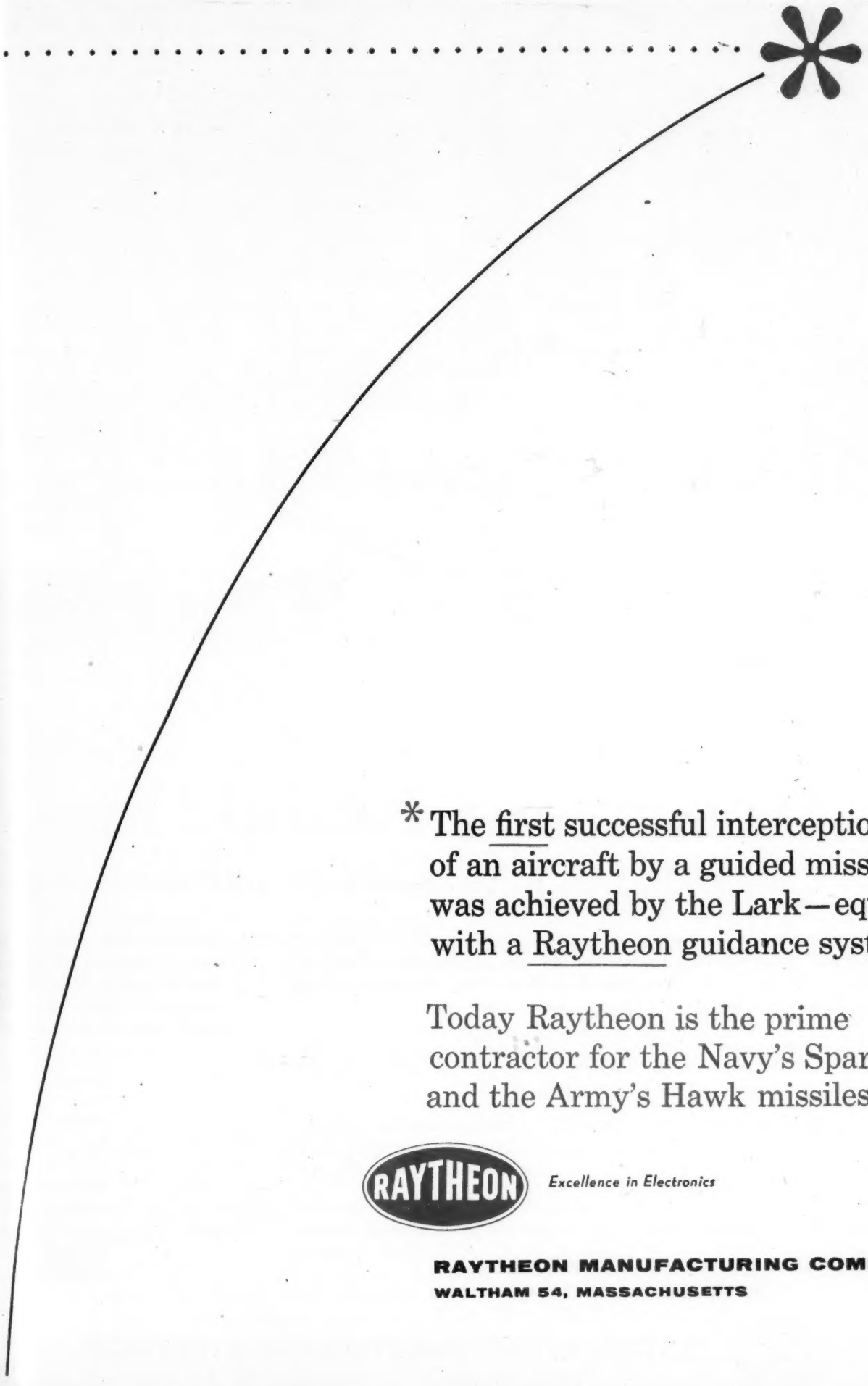

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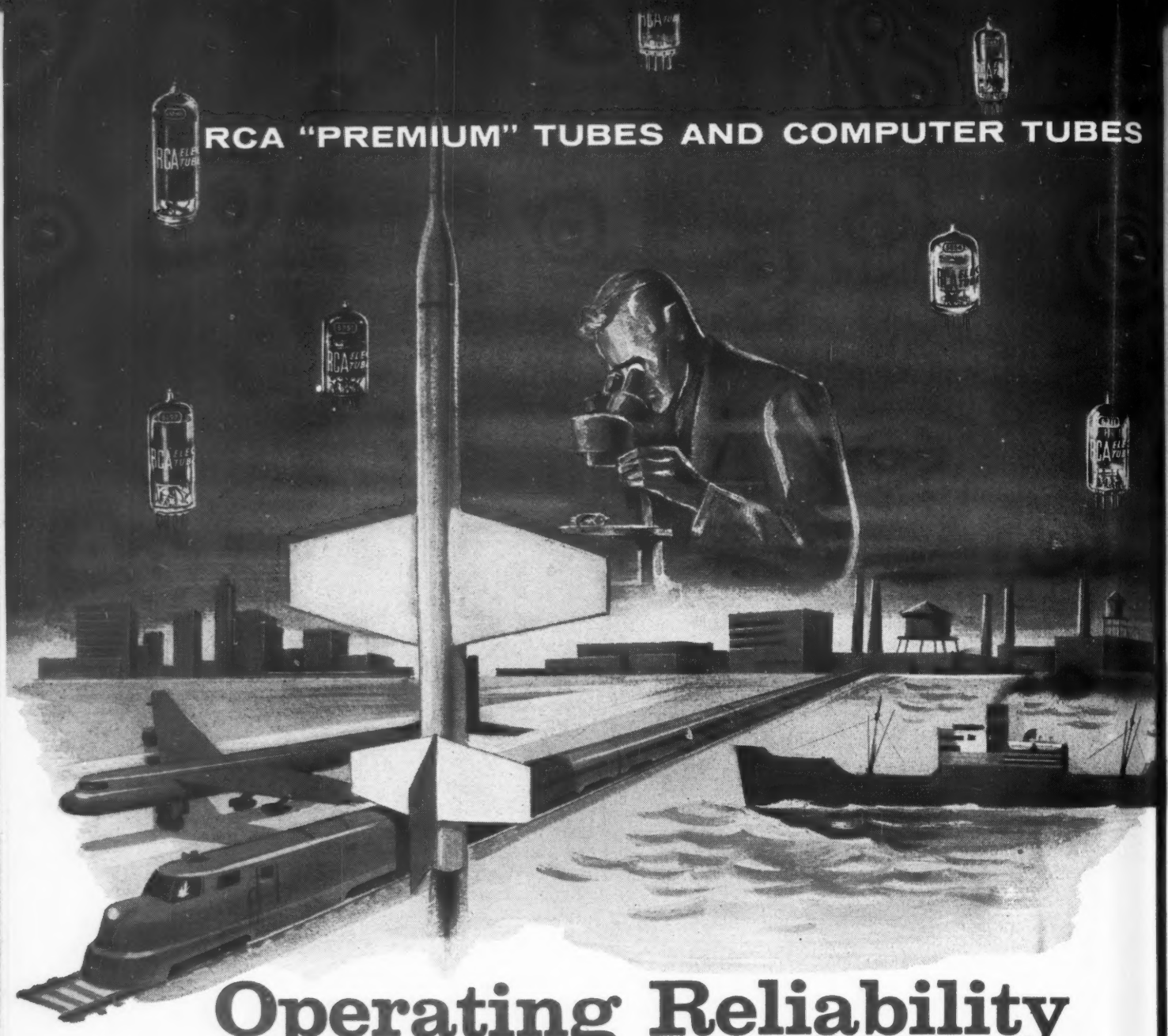

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You sign up and pay a premium of only one percent of your annual flight pay. Coverage for accidents becomes effective on the last day of the month in which your application is received. For disease, protection goes into effect thirty days after the effective date of the contract (i.e., thirty days after the last day of the month in which you apply).

If you're grounded due to accidental bodily injury or disease contracted during the period of your coverage under the Plan, you collect monthly indemnity for loss of flight pay up to a maximum of twenty-four months. There is a waiting period of ninety days for grounding due to disease or non-aviation accidents; 180 days on aviation accidents. Reason is that, for disabilities of shorter duration, the government gives you a chance to make up for lost flight time, and to collect your regular flight pay. If you cannot do so, then the Flight Pay Protection Plan will pay you retroactively for flight pay lost during the period of disability.

All members of the US Air Force, Air National Guard, Air Reserve, and other military services who are on flight status and who belong to the Air Force Association are eligible. Even men currently flying on waivers can apply for protection; the policy won't cover groundings due to the cause for which the waiver was issued, but it will cover accidents or groundings due to other disease contracted during the period for which coverage is effective.

Of course, this coverage does not apply in case of war, declared or undeclared, or hostile action, civil war, invasion, or the resulting civil commotion or riots. There are also other exclusions which may never apply to you, but you are entitled to know them. They are as follows:

Plan does not cover losses due to a criminal act of the AFA Member; or from bodily injury occurring while in a state of insanity (temporary or otherwise); or from officially certified "fear of flying"; or caused by intentional self-injury, attempted suicide, criminal assault committed by the Member, or fighting, except in self-defense; or from failure to meet flying proficiency standards unless caused by or aggravated by or attributed to disease or accident; or accidents caused while riding or driving in any kind of race; or by alcohol, drugs, venereal disease, arrest or confinement; or willful violation of flying regulations resulting in suspension from flying as a punitive measure; or sentence to dismissal from the service by a general court-martial, submitted resignation for the good of the service, or suspension from flying for administrative reasons not due to accident or disease or voluntary suspension.

The Plan does not cover losses to any Member resulting in whole or in part from a pre-existing disease or disability or recurrence thereof, for which a waiver has been authorized by appropriate medical authority. Loss of life shall not be deemed as a loss for purposes of this plan.

In the event you receive the total limit of twenty-four (24) months' indemnity, your coverage is automatically terminated. You may thereafter reapply for insurance coverage in the same manner as a new Member. Coverage, and the payment of indemnities, also end with termination of membership in AFA, or with resignation, retirement, or pensioning from the service, or at age sixty.

This insurance is renewable at the option of the Aetna Insurance Company.

Policy Form No. 1-620-3A

AIR FORCE ASSOCIATION FLIGHT PAY PROTECTION PLAN 657

Underwritten by AETNA INSURANCE COMPANY, 670 Main St., Hartford, Conn.

(please print) Rank Name Serial Number Yrs. Service for pay purposes

MAILING ADDRESS _____

AMOUNT OF ANNUAL FLIGHT PAY _____

I certify I am currently on flying status and entitled to receive incentive pay, and that to the best of my knowledge I am in good health, and that no action is pending to remove me from flying status for failure to meet physical standards.

SIGNATURE OF APPLICANT _____ DATE _____

Application must be accompanied by check or money order for annual premium.

The annual premium charge is one percent of ANNUAL flight pay.

Send remittance to Air Force Association, Mills Building, Washington 6, D. C.

Refugees unload at McGuire AFB. Safe Haven brought 9,700 Hungarians to this country in only 23 days in mid-winter.

cialists from McGuire, C-121 specialists from Charleston, line personnel from Burtonwood, England, and from Tripoli. And back-up C-118s and crews were positioned at Prestwick, Rhein-Main, and Harmon as added protection against en route delays.

An Air Force cannot exist without instantaneous and reliable communications, and on December 8 there were no such facilities at Munich Riem. But on that day electronic equipment and the necessary skilled technicians were being rushed from all over Europe to Munich. AACS technicians arrived from Landsberg Air Base, Germany, with a complete AN/MPN-11B—the latest model GCA unit. It was tested and in operation by the morning of the ninth. Operating personnel came from Erding, Furstenfeldbruck, Germany, and Etain Air Base, France. A UHF (ultra high frequency) transceiver was installed by radio technicians from Neubiberg. Technicians from Hahn Air Base, Germany, worked two days without sleep to set up a CRD-6 ultra high frequency direction finder.

Chambley Air Base in France and Hahn and Freising in Germany sent maintenance technicians. Within forty-eight hours a complete telecommunications center linked Munich Riem and Rhein-Main, Siegelbach, Germany, South Ruislip, England, and McGuire. Ten teletype operators and three maintenance technicians came from Siegelbach to operate the equipment.

A sudden change of plans moved the weather service to Munich. More personnel on the move . . . and fast. The weather was more than uncertain; it was suddenly ominously non-operational. Traffic personnel from Rhein-Main were sent to Munich by train, the delay making it necessary to do three days' work in one. With the weather pattern turning flat and unreliable, accurate weather forecasts were absolutely necessary.

An Aero Medical Evacuation Section moved up from Rhein-Main to Munich. Air Force and Army speedily worked out a cooperative procedure. An Air Force flight surgeon would examine all refugees being evacuated for medical reasons at least one day before departure.

It was not until the night of December 9 that SACOM was advised to make ready the former German Army barracks Luitpold and Hohenbrunn for the refugees. They would also be required to furnish processing and transportation . . . within the *next twenty-four hours.* Soldiers were rushed so urgently out of movies, snack bars, from homes and friends' homes that some thought *the* war had finally begun. They moved from as far away as Stuttgart and Nurnberg, were handed brooms, buckets, and mops and told to clean up the dirty and still freezing cold barracks.

Five hundred beds were lugged in, enough mattresses, pillows, and blankets to cover all . . . and then each bed was neatly made. A complete medical dispensary, staffed by Army doctors, nurses, and medical personnel, was set up. Army WACs were put on twenty-four-hour duty to help the women and children. The Red Cross came in to provide personal items, from diapers to lipstick.

Officers and men worked all night, and by the time the first refugees arrived, Hotel Safe Haven was ready and open for business. It remained open twenty-four hours a day for the duration.

With a great sigh of relief, ICEM was told to bring on the refugees. The first group arrived at Hotel Safe Haven on the afternoon of December 10. That same afternoon—as it did every afternoon thereafter—Munich TCC (Transport Control Center, Troop Carrier Command), published an extract of the master flow plan for the following day's operations, thus making possible the preplanning of call-ups. ICEM personnel made passenger selections from master rolls sent from Vienna with each arriving group, immediately providing the MATS traffic control with this list plus corresponding parolee visa numbers. This same list was also telephoned to SACOM Safe Haven Command Post where the designated passengers were located and processed.

December 11 was a beautiful day. According to schedule, the first busload of refugees arrived at Munich Riem exactly forty-five minutes before departure time. Exactly as planned, the first trip departed the ramp . . . only four days after publication and distribution of ATLD Operations Order Nr. 73-56, nickname Operation Safe Haven.

The C-118 transport is over the Atlantic, somewhere between Prestwick and Harmon; the course is almost due west. It is night, dark outside and almost as dark inside, for only some of the galley lights are on, soft as candlelight. The talk is finished; the heads are relaxed against the white seat covers. The gentle hum of the four powerful engines is a soothing lullaby. Most of the passengers are asleep; a few stare into the shadowed space, thinking their own private thoughts.

The pilot enters from the cockpit, walks slowly down the aisle toward the galley. He is a captain, a big man, immaculate in the blue uniform of the Air Force. He is barely thirty. He walks quietly, as if afraid he'll awaken the sleeping people who fill every seat in the airplane. He looks into their faces, smiles amiably at one who is awake. She is an elderly woman, and her smile is slowly formed.

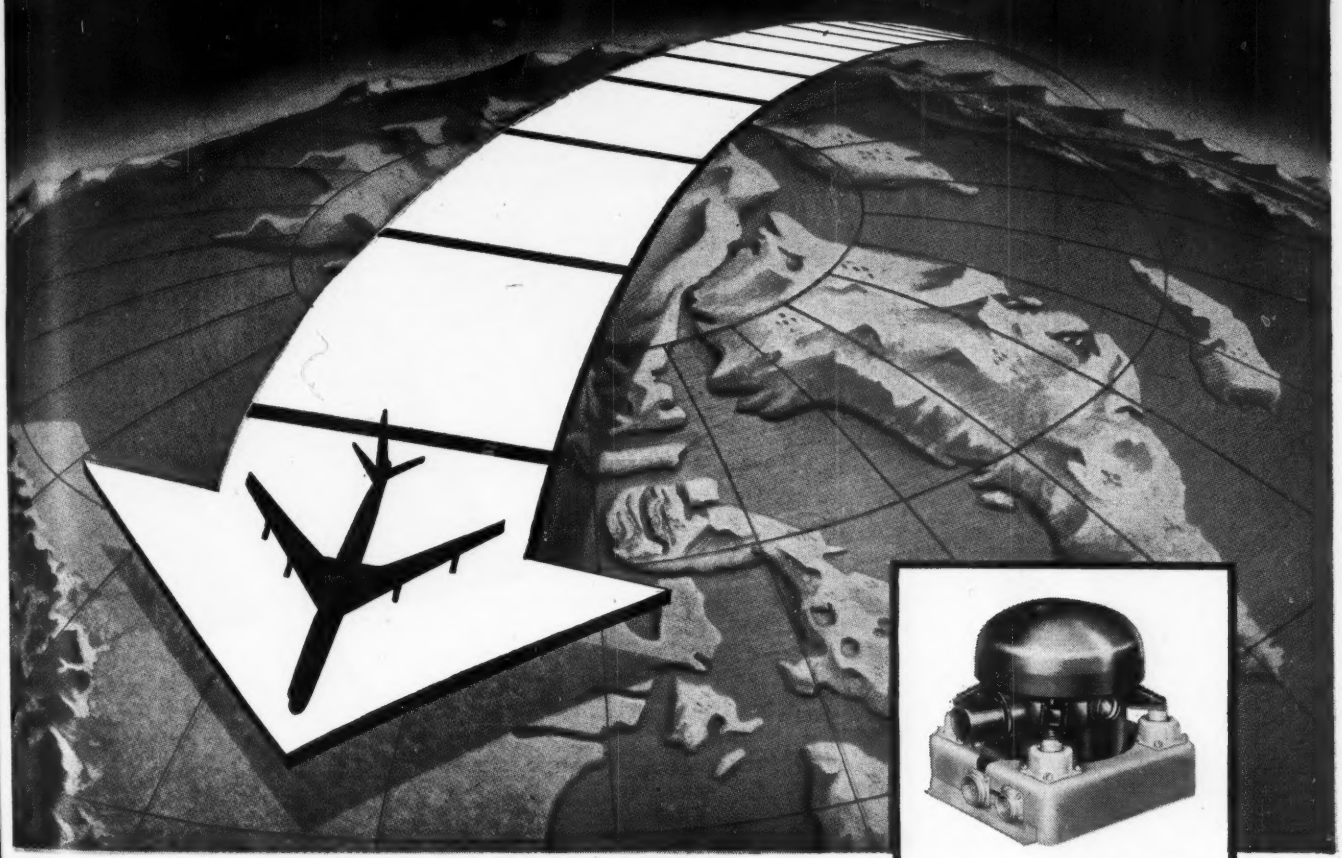
He stops, bends over her, quietly says, "Everything all right?" She does not understand the words, but she can read his eyes, and she nods and pats his hand. In turn, he pats her hand, grins, walks on. Now he is by the galley. He slowly pulls a cup, fills it with water. He seems even bigger against the soft light from the galley . . . and older.

It is very quiet in the C-118; the pilot listens automatically to the engines, with typical neatness throws the paper cup in the receptacle, touches a sliding cabinet door that is vibrating ever so slightly. Then he walks slowly, quietly back to the cockpit. He feels good tonight, real good. He isn't quite sure whether he's ever felt this good before in his whole life. Very gently, he closes the door.

(Continued on page 83)

New Lightweight Sperry C-11 Gyrosyn Compass

GIVES ACCURACY BETTER THAN 1/2° PER HOUR



DIRECTIONAL GYRO UNIT OF C-11 SYSTEM

21-lb system achieves precision needed for global and polar flight

Sperry's new C-11 Gyrosyn* Compass is the first to incorporate a non-floated gyro with an accuracy better than ½° per hour random drift rate. Exhaustive laboratory tests of the 21-pound system have shown that even under severe stress and vibration the random drift rates of the gyro do not exceed ½° per hour and actually achieve a low of ⅛°.

Designed especially for navigation of long-range, high-speed aircraft, the C-11 employs new design principles to achieve this unprecedented accuracy. At latitudes up to 65° the system provides precise heading indication in its normal function as a slaved directional gyro. At higher latitudes, where magnetic compasses are unreliable, the gyro can be unslaved to operate freely and still provide less than ½° per hour random drift rate.

The all-transistorized C-11 system is compatible with all large aircraft, military and commercial. Write our Aeronautical Equipment Division for further details on this notable Sperry contribution to safer, more accurate long-range navigation. *T. M. REG. U. S. PAT. OFF.

Major Features of the C-11

ACCURACY – *Direct coupling of gyro and master indicator eliminate the synchro errors common in repeater-type systems.*

CONTROLLED LATITUDE CORRECTION *Automatic compensation for apparent drift due to earth's rotation. This corrective action is achieved in slaved or unslaved condition.*

ENVIRONMENT RANGE – *Maintains accuracy at temperatures from -54°C to 71°C, and at altitudes up to 70,000 feet.*

INTERCHANGEABILITY –*Individually sealed plug-in components can be interchanged between systems; reswinging and recalibration unnecessary when changing parts.*

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TAC's most versatile bomber

THE DOUGLAS B-66 DESTROYER

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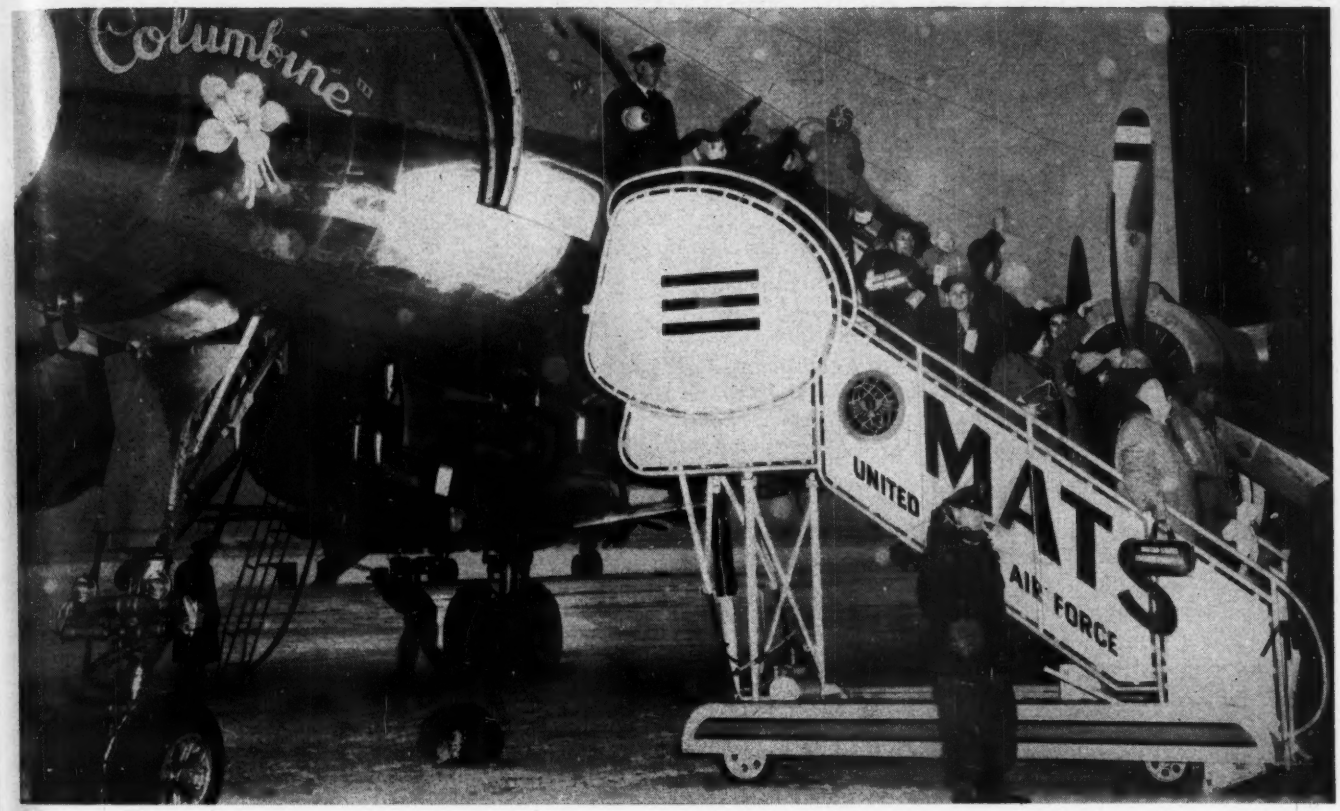
ALLISON *Prop-Jets and Turbo-Jets*

GM AIRCRAFT POWER



President Eisenhower's personal plane loads refugees at Munich Reim Airport, Germany, for the long flight to the US.

AIR BRIDGE TO FREEDOM — CONTINUED

The passengers feel hardly any contact when the wheels hit the Harmon runway.

The show was on the road.

But the next day it almost stopped. A continental high-pressure area moved maliciously out of Russia and flattened out, spreading fog over most of the continent and the United Kingdom. Prestwick was closed by high winds. At the same time high winds en route to the Azores created critical fuel problems that forced the C-118s to return to Rhein-Main for servicing before proceeding to Lajes.

The daily commitment of five MATS aircraft moved 276 passengers according to schedule. But the weather continued bad for the next three days. Ambassador Thompson began to worry again, revived his request that MATS commercials be flown into Vienna, pointing out that the first 5,000 refugees had been successfully flown out by commercial carriers contracted by ICEM. Once again both ICEM and MATS, this time with a personal assist from General Dany, persuaded the Ambassador to withdraw his request.

Weather improved on the fifteenth, sixteenth, and seventeenth, making it possible for twenty-one MATS and seven contract commercial aircraft to carry 1,761 refugee passengers to the United States. Business was picking up again.

And then on the eighteenth the Russian fog crawled in and sat down on Munich Riem. For two days only four planes got off the ground. Now the Army had new problems; 1,144 refugees piled up in Munich, and 515 more were on the way. They managed to divide the overflow between the barracks in the Seventh Army NCO Academy in Stettin Kaserne and the dormitories at the Columbia Hotel. The Army was getting red-eyed.

Long-range planning provided a steady flow of passengers from Austria to the holding points to waiting aircraft at Munich Riem to McGuire. An error in timing could either halt the operation for lack of backlog or saturate the limited billeting facilities. This time weather was clogging the refugee pipeline.

The fog finally became so dense at Munich Riem that an observer was sent to the end of the runway to transmit visibility readings by walkie-talkie to the tower. A weather reconnaissance mission was run to determine the extent of fog coverage in the Munich area.

The Army was having other problems. Family groups had been assured they would not be separated, yet it was almost impossible to identify the groups from the master nominal rolls. Cousins, aunts, uncles were traveling together. Married daughters were named differently from their parents. Groups were often threatened with separation, and their sometimes hysterical protests caused last-minute changes in the passenger lists.

The Canal . . . and with each passing hour it is colder and darker. There is the sound of machine-gun fire, the air is bright with flares. More firing, the barking of dogs, distant shouts. Then darkness and silence, brooding silence. There is a wind now, a persistent wind that freezes everything it touches. The young men are listening, hardly daring to breathe. Two who have night glasses stand erect, looking into Hungary. And finally they hear a very young voice crying, "Mamma . . . Mamma."

One young man, a tall, quiet-voiced American, wades across the Canal and vanishes into the blackness. In a moment, another follows, a young Englishman . . . and he too fades into the night. A third crosses, but he remains waiting on the opposite bank. The first young man runs toward the crying child, the other follows close behind.

A flare . . . and both fall to the ice-hard ground for there is no cover. They track the young voice. It belongs to a small boy sitting next to an unconscious woman, a woman who has been shot but has crawled a long way, for the

(Continued on following page)

trail of blood on the snow leads clear back to Hungary.

One carries the woman, the other the child. The flares are over them now, the dogs closer. Run for it! There is the frightening sound of hurrying boots. A few yards more . . . only a few yards more to the Canal. The man carrying the child staggers, runs again, hands the child to the waiting man and falls into the Canal. The man carries the child across to the other side. And the first young man carrying the wounded woman is also safely in Austria.

There is another burst of gunfire toward the Austrian side. The Englishman, they must get the Englishman. But evidently the Englishman is indestructible. He climbs out of the Canal, triumphantly faces the unseen patrol, shouts "I'm a British subject on Austrian territory. Shoot me now . . . go on, shoot."

Silence, only silence from the other side.

The woman has been shot in the stomach and face. But she will live. And she will tell how she and her child were helped almost to the border by Hungarian soldiers. Ten minutes later, Hungarian soldiers were shooting at them.

Breakfast is served at a stop en route to McGuire. Many of the young refugees had never seen oranges or bananas.

Or perhaps they were Russians. One hardly knows. It is common gossip that Hungarian border guards are completely unpredictable; one moment they will be helpful, the next they will kill . . . perhaps because Russians are present. The woman makes no sound and yet tears crawl down the furrows in her cheeks. Finally she whispers, "The Russians . . ." She closes her eyes wearily . . . the tears push out from behind closed eyelids. One does not see this very often.

Meanwhile the backlog of medical cases was building up. The Air Evacuation people had also promised that families would not be separated even though only one member might be a medical case. It had also been established that all pregnant women beyond the seventh month of pregnancy and mothers with infants under six weeks of age would be included in the medical flights. When the weather cleared somewhat on the twenty-second, the first aero-medical evacuation plane departed, carrying eight litter and two ambulatory patients plus eighteen relatives. Among the patients were three pregnant women who might possibly go into labor in flight. An incubator, oxygen equipment, and an aspirator were placed on board and one complete litter tier was set up.

But the women were having no part of this equipment. They were concerned about the future citizenship of their offspring and held on resolutely until they were safe on

All you can eat—a rare treat for all refugees, especially for those who've lived all their lives under Red rule.

US soil before allowing the infants to come into this troubled world. Four flights were made and no children were born en route . . . much to the relief of the Hungarian mothers. So many pregnant women were evacuated that soon this phase of Safe Haven was nicknamed "Baby Lift." Christmas was now only a few days off and, from Munich to McGuire, Air Force men and women and children were wrapping presents, trimming trees, preparing food and sweets—at their own expense—for the refugees who would pause only briefly en route to the United States. Groups of children were practicing carols. The many volunteers were determined to make the holiday flights a series of Christmas parties.

This is Andau, a tiny village close to the border. An ugly village of straight-lined houses and bare trees, hard black and white under the snow. No signs proclaim unusual activity; yet it is to some of these buildings that the newest refugees are brought to be fed, reclothed, given a night of rest, then sent on to the larger camps. "Rette das Kind" translates in English to "Save the Child."

This is the empire of Miss Hawkins—her work and her life. In the center of the long, one-story building—coincidentally the schoolhouse—is a small room usually called the kitchen, perhaps because there is a small electric hot plate where one can always heat water for tea or coffee or chocolate. On either side of the kitchen are the dormitories, one for unattached women, the other for children and their mothers. The children's dormitory is quite large, crowded with neatly made cots in orderly rows.

It is the day before Christmas, and the rooms are crowded with joyful activity. A tree set up at the far end of the children's dormitory is being decorated. Red and green streamers are being hung across the ceiling. There are sprigs of holly, pine, and even some mistletoe. Small gifts for children are being wrapped and piled. Most important, there is a warm happiness in the air, even for the refugees who are helping with the Christmas decorating. Everyone is very busy for it is only two hours until midnight. Soon Christ will be born again and the world will celebrate the love and compassion the Child brought with Him.

A man and a woman enter from the kitchen, stand for a moment in the doorway. The woman carries a child, a child so limp with sleep that his little arm dangles and swings like a pendulum. They stand for a moment, completely be-

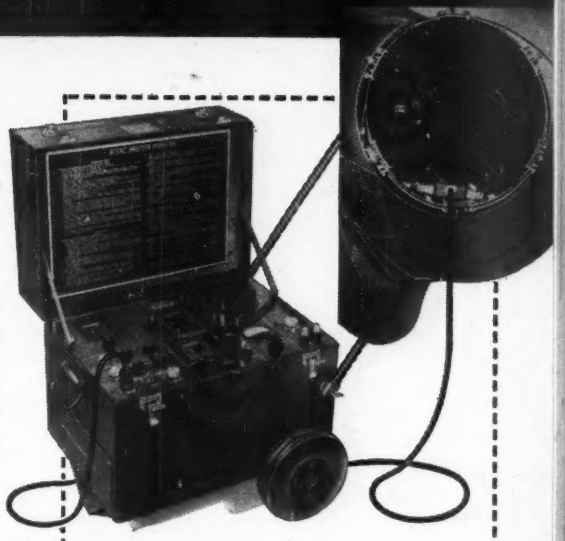
(Continued on page 87)

BOEING PHOTO

. . . ARE PROTECTED BY THE B&H

JETCAL® ANALYZER

Two of the most important factors that affect jet engine life, efficiency, and safe operation are *Exhaust Gas Temperature (EGT)* and *Engine Speed (RPM)*. Excess heat will reduce "bucket" life as much as 50% and low EGT materially reduces efficiency and thrust. Any of such conditions will make operation of the aircraft both costly and dangerous. The *JETCAL Analyzer* predetermines accuracy of the EGT and (interrelatedly) Tachometer systems and isolates errors if they exist.



The *JETCAL* ANALYZES JET ENGINES 10 WAYS:

1) The JETCAL Analyzer *functionally* tests EGT thermocouple circuit of a jet aircraft or pilotless aircraft missile for error *without running the engine or disconnecting any wiring.* GUARANTEED ACCURACY is ±4°C. at engine test temperature.

2) Checks individual thermocouples "on the bench" before placement in parallel harness.

3) Checks thermocouples within the harness for continuity.

4) Checks thermocouples *and* paralleling harness for accuracy.

5) Checks resistance of the Exhaust Gas Temperature system.

6) Checks insulation of the EGT circuit for shorts to ground and for shorts between leads.

7) Checks EGT Indicators (in or out of the aircraft).

8) Checks EGT system with engine removed from aircraft (in production line or overhaul shop).

9) Reads jet engine speed while the engine is running with a guaranteed accuracy of ±0.1% in the range of 0-110% RPM. Additionally, the TAKCAL circuit can be used to trouble shoot and isolate errors in the aircraft tachometer system.

10) JETCAL Analyzer enables engine adjustment to proper relationship between engine temperature and engine RPM for maximum thrust and efficiency during engine run (Tabbing or Micing).

ALSO *functionally* checks aircraft Over-Heat Detectors and Wing Anti-Ice Systems (thermal switch and continuous wire) by using TEMPCAL Probes.. Rapid heat rise . . . 3 minutes to 800°F! Fast cycling time of thermal switches . . . 4 to 5 complete cycles per minute for bench checking in production.

Tests EGT System Accuracy to ±4°C at Test Temperature

(functionally, without running the engine)

Tests RPM Accuracy to 10 RPM in 10,000 RPM (±0.1%)

The JETCAL is in worldwide use . . . by the U. S. Navy and Air Force as well as by major aircraft and engine manufacturers. Write, wire or phone for complete information.

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WEST TRENTON, N. J.

Tracy Voorhees, director of the Hungarian Refugee program, greets the first Hungarians to arrive in the US by MATS planes. In Safe Haven, 9,700 refugees were flown to the US in 23 days, without accident or passenger injury.

wildered. All turn to look at the new arrivals and there is a sudden sympathetic silence.

Miss Hawkins hurries to them, gently leads them to the stove that is only a few feet from the Christmas tree. She holds out her arms for the child, and at first the woman is reluctant to part with him. He is such a pretty child; he sleeps so peacefully. A pity to wake him.

But his clothes are damp and dirty from the long walk, as are those of the parents. He must be reclothed and fed warm food and perhaps be given medical treatment for frostbite or a possible cold. They massage his arms, his legs, his back. They gently slap his face, pull his little fingers. He is alive . . . but he will not waken. Drugged? Yes . . . to keep him silent during the long walk through the cold and darkness.

Children do not understand the need for hiding behind silence; when they are frightened they cry. So they must be drugged. The doctor is called, and he anxiously examines the child. As he works over the child he thinks . . . yes, they will sleep longer, perhaps forever. The father thinks . . . it was for my child's future that I left Hungary; if he dies I will go back and kill Russians until they kill me. The mother, her eyes wide and dry, watches the doctor gently push a hypodermic needle into the thin arm, thinks . . . is it for this I loved my husband and bore our child, this long, dismal walk?

An hour passes . . . and finally the doctor turns helplessly from the child. He is dead. The doctor carries the child from the room, and the mother and father silently follow. It is very still for a moment.

And then Miss Hawkins, who has seen thousands of suffering mothers and fathers and children and has suffered with each, brusquely tells the others to resume the business of Christmas decorating. Slowly, the others turn back to their work, gradually the warmth returns and soon—as it should—the dead child is buried with other bitter memories.

Peace on earth . . .

Perhaps as a Christmas gift to the refugees the weather suddenly cleared. On December 23, eleven aircraft left Munich Riem. Departures shot up to eighteen, then on Christmas Day there were fifteen departures. By December 26 Safe Haven recovered a deficit of fourteen military trips, and on the next day moved four trips ahead. A total of 130 trips had transported 8,125 refugees to McGuire. The military lift was nearly complete, and with the bulk of the remaining flights committed for commercial carriers, it was announced that Safe Haven would be completed on the twenty-ninth, two days ahead of schedule.

But the processing center at Camp Kilmer was jammed, and it was requested that the remaining lift be spread over January 1 and 2, 1957. Accordingly, on January 2 the 9,700th MATS passenger left Munich Riem with General Dany aboard the airplane as honorary refugee number 9,701.

Weary but happy, the men moved back to their home stations almost as rapidly as they had moved to Munich. They had worked well together, stimulated by the conviction they were helping fellow human beings in distress. By January 4 men and equipment were gone, and Munich Riem settled back to the humdrum business of flying passengers to destinations of their choice. The Germans complained that it was rather quiet . . . and lonely.

Operation Safe Haven was unique in several respects. Munich Riem was the loading point for the refugees; yet all MATS aircraft were fully serviced and given operational clearance at Rhein-Main. This included food, service, refueling, flight-planning, turn-around maintenance, and clearance paperwork. This made it possible for aircraft to land, load, and depart from Munich Riem within the one-hour ground time authorized by the operations order.

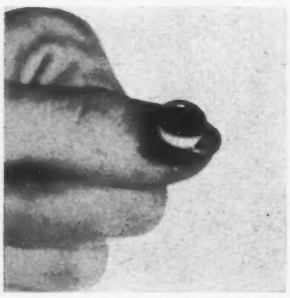
Of the 107 aircraft processed, only two were delayed by maintenance; nineteen remained overnight for weather reasons; and twenty-five overstayed the one-hour limit for short periods because of weather or non-availability of passengers at the appointed time. A total of 156 carriers—110 military and forty-six commercial contract—carried 9,700 passengers from Munich to McGuire. Not one aircraft was lost; not one passenger was injured.

The sun is rising over the Canal. There is light now, light to see. But the Canal is deserted; not a living thing moves on either side. There is no sound, not even that of a bird. It is as if this tortured land were waiting for the night to return. But no one comes over. The border is closed.—END

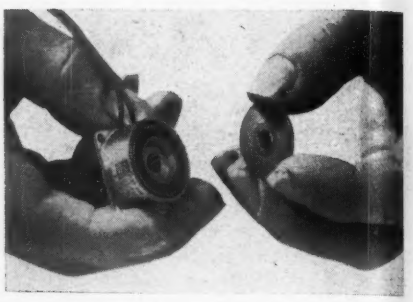
ABOUT THE AUTHOR

Mr. Krims served with the Fifth Air Force on New Guinea in World War II before becoming a combat correspondent for the wartime version of this magazine in 1944. Thereafter, he covered AF activities in the Pacific. On V-J Day, he tells us, "A young fighter pilot solemnly asked me if it was true I had flown reconnaissance for Custer at Little Big Horn." Since the war, Mr. Krims says, he has tried to "regain my lost youth in the relatively peaceful places of the world, as indicated by this article."

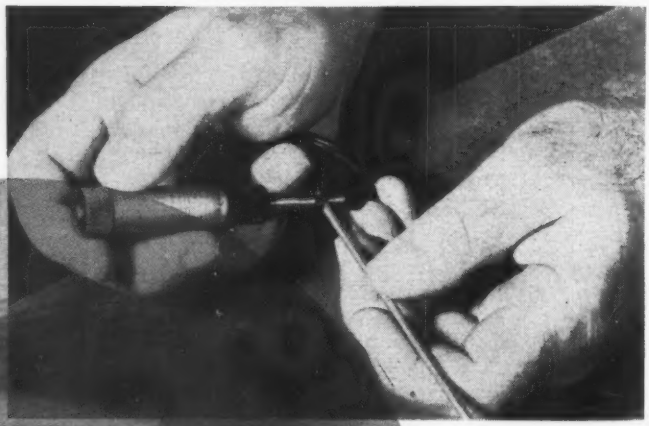
NIXIE, an electronic tube that "counts" from zero through nine. Made by Burroughs Corp. for military and industrial control applications.



Battery made by National Carbon Co. powers wrist-watch made by Hamilton.



Electro-magnetically operated clutch by Warner Electric Brake & Clutch Co. for miniaturized control mechanisms.



Welding "burn-through" and cracks are prevented by carefully checking the wall thickness of small tubing at the D.S.D. Manufacturing Co.

'Handy' Guide to Little Things

General Electric's battery will deliver ninety-five volts for twenty years to electronic instruments.

Hydraulic amplifier made by Manning, Maxwell & Moore is designed for use in highly sensitive control systems.

THE office wag said putting together this page was "thumb fun." Actually it is a striking illustration of the current trend toward miniaturization. Each item contributes to improved performance in aircraft, guided missiles, electronic equipment, or industrial controls. The most remarkable changes have stemmed from the transistor, which reduces both size and weight in communication equipment. Miniaturization has created a whole new complex of manufacturing techniques primarily in the defense efforts, but the by-products are beginning to show in consumer goods such as the electric wrist-watch and the transistorized portable radio.—END

AROUND THE WORLD WITH SIKORSKY HELICOPTERS

ARCTIC STUDIES—The only access to this arctic research outpost in Northern Greenland is by helicopter. The Red Rock Camp, Nunatarssuag, established by the U. S. Army's First Engineer Task Force to carry out ice cliff studies, receives food, mail, and passengers by Sikorsky S-55, designated H-19 by the Army. The versatile S-55 is an arctic veteran. It has seen grueling service in Greenland, Northern Canada, and Alaska.

ASSAULT EXERCISE—Marines at Camp Pendleton, California, launch a helicopter-borne vertical assault as a feature of a recent major exercise involving 15,000 men. A Marine Corps HRS, an S-55 type, is shown above after landing its assault troops. The Marine Corps also flies larger HR2S and HUS Sikorsky helicopters.

HELICOPTER HISTORY

FIRST TRANSATLANTIC FLIGHT

In July, 1952, two U. S. Air Force Sikorsky H-19s touched down at Prestwick, Scotland, after a record-making 920-mile flight from Iceland. This was the longest leg in the first and only helicopter flight across the Atlantic, from Westover Air Force Base to Wiesbaden, Germany. The pilots were Capt. Vincent H. McGovern and Lieut. Harold W. Moore.

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What History Teaches Us About Air Base Defense

Air base defense is a controversial topic which needs to be thrashed out now. Many of us have voiced fears during private discussion about the lack of air base defense, and AIR FORCE ran a very timely article on the subject not too long ago. ["Does the Air Force Need Its Own Army?," by William V. Kennedy, November '56.]

These fears focus back to the time of World War II when our Fourteenth Air Force had to evacuate its new, hand-constructed bomber bases in China in the absence of an allied ground defense against a Japanese Army advance. The memories of the persistent advances of the Chinese Soviet hordes in the Korean war increase our fears. Then the failure of the French to hold Dienbienphu was a hard blow to take. However, there were two major shortcomings which contributed greatly to the loss of Dienbienphu—lack of resupply and the absence of a mobile combat force. And these are most often disregarded.

Sure, every airman should be trained for combat, and each air base unit must be prepared for local defense and counterattack. And, of course, we depend upon local authorities for support against sabotage and small guerrilla forces.

But air operations and multi-million dollar planes cannot be defended from the perimeter of the flying field. Let us not be led astray by such a misapplication of point defense theory.

The point defense must remain at its academically proper place. And that is at terrain features along natural avenues of approach to the tactically placed air fields. And in addition, there must be a hard-hitting mobile combat force large enough to shatter any force the enemy may detach for an adventure against the air field complex, or able to stop a major ground attack until our ground forces can engage.

To be successful, defense of our air fields must be organized on a theater basis. The major mobile combat force, probably in corps strength, must be streamlined, fast, hard-hitting. It should include Rangers, fast medium armor, tactical air support. It must have sufficient organic logistic support to give it a measure of endurance. It should use the tactically disposed point defense units as foci for maneuvers. It must not defend them. Its function is to shatter enemy units.

The point defense units should be of battalion or regimental size, depending upon the environment. They must be able to perform the classic function of a battalion-size unit to withstand prolonged assault by an enemy force of army size.

This battalion should have two major components. One, the infantry, should use hand-fired and remote-controlled weapons. They would probably be organized along a "fives" system, to withstand around-the-clock continuous assault for extended periods. The other component should be a small force of combat engineers and armor to counterattack overrunning enemy forces. This armor could be obsolete and slow, but it must be heavy. Perhaps a platoon of light armor could be included. This point defense unit would have to be well dug in—with underground living quarters, maintenance shops, and vehicle storage. The regimental size force should include, in addition, an independent mobile combat task force that could go out in the immediate neighborhood and raid enemy units.

The defense of air fields would thus be an integrated system. It would be able to withstand tri-dimensional infantry envelopment. It differs from units which might be set aside by theater ground forces for local defense in that its primary function is defense of the Air Forces on the ground. The other would tend to support the major ground force combat units.

—WILLIAM H. STEIN

Mr. Stein, now Commander of AFA's New York State Wing, and a former regional vice president of the Air Reserve Association, lives in New York City, where he is in the fur business. He's a major in the Air Force Reserve.

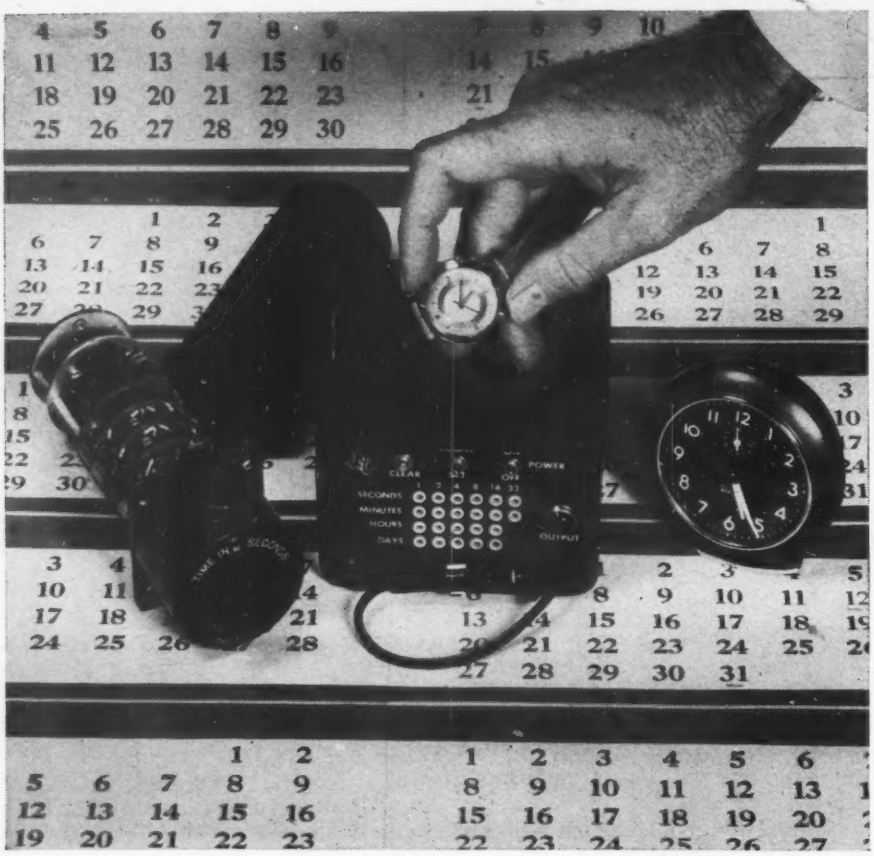
What Sort of War Are We Best Prepared For?

This is a somewhat belated attempt to comment on the leading article in your January issue—an article based on a talk by Dr. Edward Teller. Much of what he says is indisputable, although I question the applicability of so comprehensive a title as "The Nature of Nuclear Warfare" to an article that is primarily concerned with a few of the factors influencing survival in an airpower battle.

Until our participation in the Korean war, it could perhaps be claimed that the threat of nuclear retaliation had kept us at peace, but after that war it became clear that our diplomacy did not permit us to choose the kind of war we wanted to fight. The strategic nuclear war is the one we are best prepared for, and admittedly it is the only one that presents an immediate danger to our survival as a nation. Consequently, we do need a strong SAC and are most fortunate to be reasonably well armed in that particular command. However, it may be worth recalling that Singapore was well equipped, too, but its long-range guns all pointed in what turned out to be the wrong direction. For similar reasons let us not discontinue the Army and the Navy, in what Dr. Teller suggests may be the best thing to do, merely because the Air Force has an important job.

Many others are better qualified than I to justify the construction of

(Continued on following page)



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JET BLASTS——CONTINUED

aircraft carriers, but one obvious reason for them arises from the strategic missile threat. This is a threat that is not as distant as some suppose. Given the predicted fifteen to thirty minutes' maximum warning, assuming all the communications links are working, what can be done to preserve or to utilize SAC's strike potential? Nothing is as vulnerable as a parked aircraft. As the exact geographical coordinates of every US bomber base are public knowledge, missiles destined for them can be zeroed-in and launched at any time in one gigantic salvo, and then where is your massive retaliation?

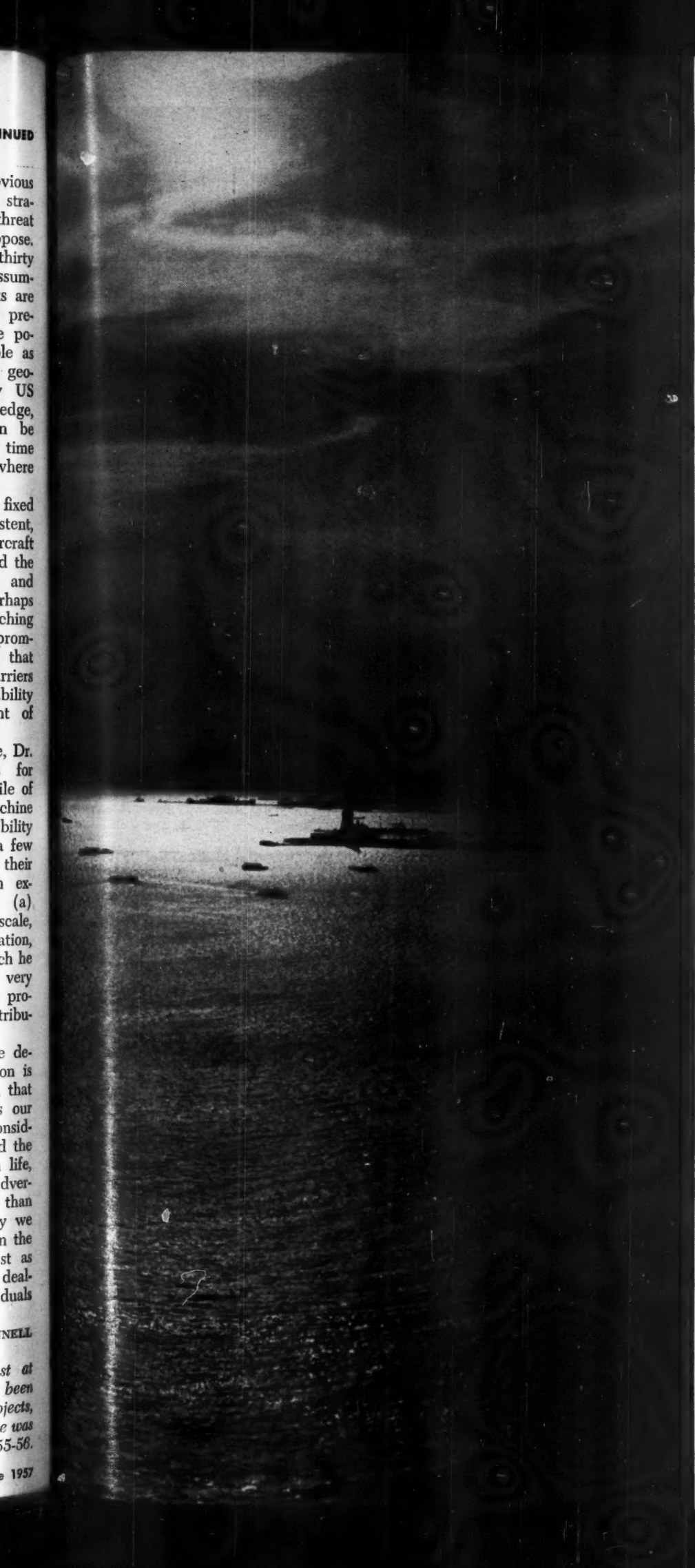
Our chances to retaliate from fixed bases might be very poor, if existent, and at such a time carrier aircraft would be our last resort; granted the other side can eventually find and sink these carriers and do this perhaps within a few hours. Missile-launching submarines hold considerable promise although it is not obvious that they are clearly superior to carriers when one considers the probability for inflicting a certain amount of damage per dollar invested.

In speaking of passive defense, Dr. Teller suggests deep shelters for virtually everyone and a stockpile of food, trucks, power plants, machine tools, etc., that will ensure our ability to be "back in business within a few hours." These remarks taken at their face value certainly imply an extremely naive attitude toward (a) the cost of civil defense on this scale, and (b) the duration of dislocation, not to mention fall-out with which he is, of course, very familiar. I very seriously question our ability to provide shelters, food, or a food-distribution system that will do the job.

Assuming we shall be on the defensive, and no other assumption is tenable, it remains to be shown that we shall be only hurt whereas our adversary will be destroyed. Considering our population density and the high value we place on human life, as contrasted with a possible adversary, we have far more to lose than he. However, this is not to say we should all give up right now; on the contrary, we should be at least as courageous in our international dealings as we have seen that individuals in Europe can be in theirs.

—JAMES H. PANNELL

Mr. Pannell, a systems analyst at MIT's Lincoln Laboratory, has been associated with various AEC projects, including Los Alamos in 1944. He was at Headquarters, SAC, from 1955-56.



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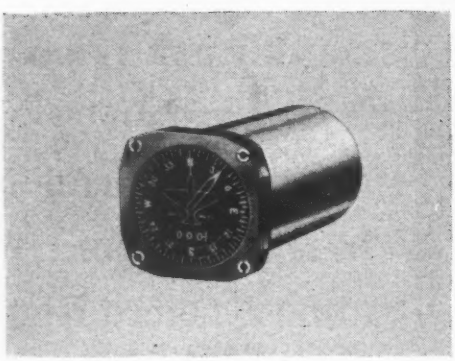

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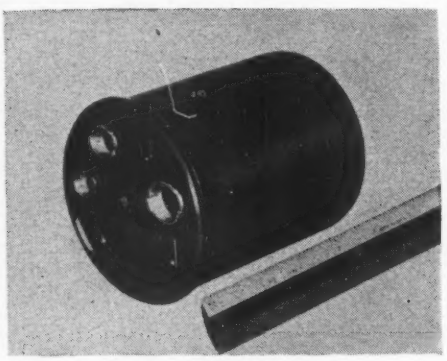

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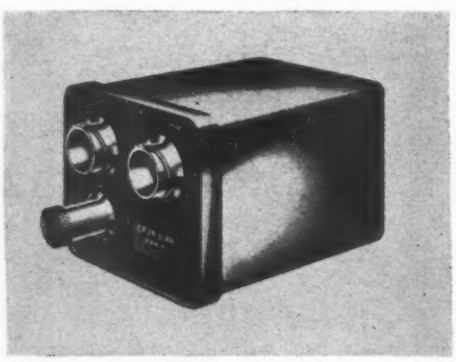

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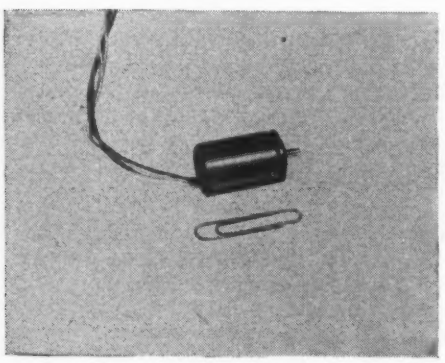

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KICK-OFF AT EGLIN FIREPOWER DEMONSTRATION

AFA

CELEBRATION OF THE AIR FORCE'S

50th Anniversary

GATHERS MOMENTUM OVER NATION

THE Golden Anniversary Celebration of the United States Air Force was nationally launched on May 6 at the USAF's Aerial Firepower Demonstration, Eglin AFB, Fla. It is difficult to imagine a more appropriate time or place for the launching than this two-hour demonstration of our strategic and tactical airpower punch.

Always a spectacular event, the May demonstration was a special treat. To herald the beginning of the Air Force's Fiftieth Anniversary, a brief glimpse at the evolution of American fighting aircraft was shown, as planes from World Wars I and II were integrated into the flying show. The ancient Spad, the reliable Nieuport, and Boeing's sturdy P-12 proved to be excellent and nostalgic reference points for the latest fighters and bombers which followed.

As expected, the first public showing of a Boeing B-47 Stratojet bomber, employing toss bombing techniques, stole the show. The B-47 raced in at low altitude, zoomed upward in a vertical climb, and released a simulated nuclear bomb. At the top of its climb, the hundred-ton, six-jet bomber completed a half-loop and rolled out to speed away in the opposite direction from the falling bomb.

As he opened the show, Maj. Gen. Robert W. Burns, Air Proving Ground Commander, paid tribute to the Air Force Association and its role as official sponsor of the Air Force Golden Anniversary Celebration. General Burns then introduced AFA President John P. Henebry, who spoke briefly. "The Air Force Association is extremely honored to have been named official sponsor of the Golden Anniversary of the United States Air Force," he said. "In the belief that this anniversary year merits the attention of every American, the Air Force Association is currently sponsoring anniversary events across the nation." Mr. Henebry added that AFA "welcomes the interest, the support, the cooperation of all Americans in this gigantic salute to the United States Air Force—Guardian of Freedom."

More than six thousand spectators, including some nine hundred AFA guests from across the nation, attended the demonstration. A special anniversary booklet, prepared by the Washington AFA staff and containing twenty-five pages of aircraft photos and milestones of Air Force history was presented to each person at the demonstration. Ten thousand of the booklets were printed, and the remainder have been distributed to AFA units across the country in support of their local anniversary events.

The official celebration dates of the Air Force's Golden Anniversary run from May 6 until August 1, when the observance reaches its climax at AFA's Eleventh Annual National Convention in the nation's capital. The convention schedule has been extended one full day to accommodate the commemorative activities without curtailing other convention programs. August 1, designated Anniversary Day, will climax many months of planning and hard work.

An extensive program has been arranged for Anniversary Day on August 1. Memorial services will be held in the morning at Arlington National Cemetery, followed by the opening, at the Washington Armory, of AFA's Airpower Panorama, a giant display of industrial exhibits and equipment. The theme of this year's Panorama will be the Golden Anniversary. In connection with the Panorama opening, the first issue of the USAF Golden Anniversary postage stamp will be made. That night, three Anniversary Balls will complete the Anniversary Day activities.

Retired Gen. Carl A. Spaatz, first AF Chief of Staff, and an AFA National Director, is serving as General Chairman of the celebration, and George D. Hardy, also a National Director, is Chairman of the National Convention, while still another AFA National Director, Stephen F. Leo, is Chairman of the Golden Anniversary Celebration.

The editorial staff of AIR FORCE Magazine is hard at work on the August issue, a special Golden Anniversary edition. Entirely devoted to the first fifty years of the Air Force, the magazine will be the largest—in both size and distribution—ever published by AFA.

From the Pentagon, both the Air Force Secretary and Chief of Staff have pledged full support to the Air Force Association as official sponsor of the Golden Anniversary.

One of the first promotional items to reach the field was the large anniversary kit prepared by AFA Headquarters staff. Colorfully enclosed in a nine-by-twelve folder, the kit contains such anniversary items as a narrative history of the Air Force's fifty years; a chronology of Air Force historical events; a list of the most outstanding events in Air Force history; a list, with current addresses, of Air Force pioneers,

(Continued on page 99)

50 *years of airpower*

in 1 big issue of

AIR FORCE

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The August issue of AIR FORCE will be a once-in-a-lifetime production, celebrating the Golden Anniversary of American Airpower—about 500 pages over-all—225 text pages, lavishly illustrated—a real collector's item to be read and re-read until the paper just plain wears out.

It will feature an authentic history of the U. S. AIR FORCE's first 50 years, prepared by outstanding professional historians and edited by the Editors of AIR FORCE Magazine—priceless material, complete with illustrations, assembled for the first time in this issue of AIR FORCE.

This is in addition to all the plus features that you'll normally find in an Anniversary Issue of AIR FORCE—features that make people ask for *every* Anniversary Issue, up to ten or twelve months after publication. In August, AIR FORCE will run up-to-date command charts, identifying by name and function the top leaders of the Air Force; a complete guide to Air Force bases, with maps and background information—page after page of reference material *in addition* to the History of the U. S. Air Force.

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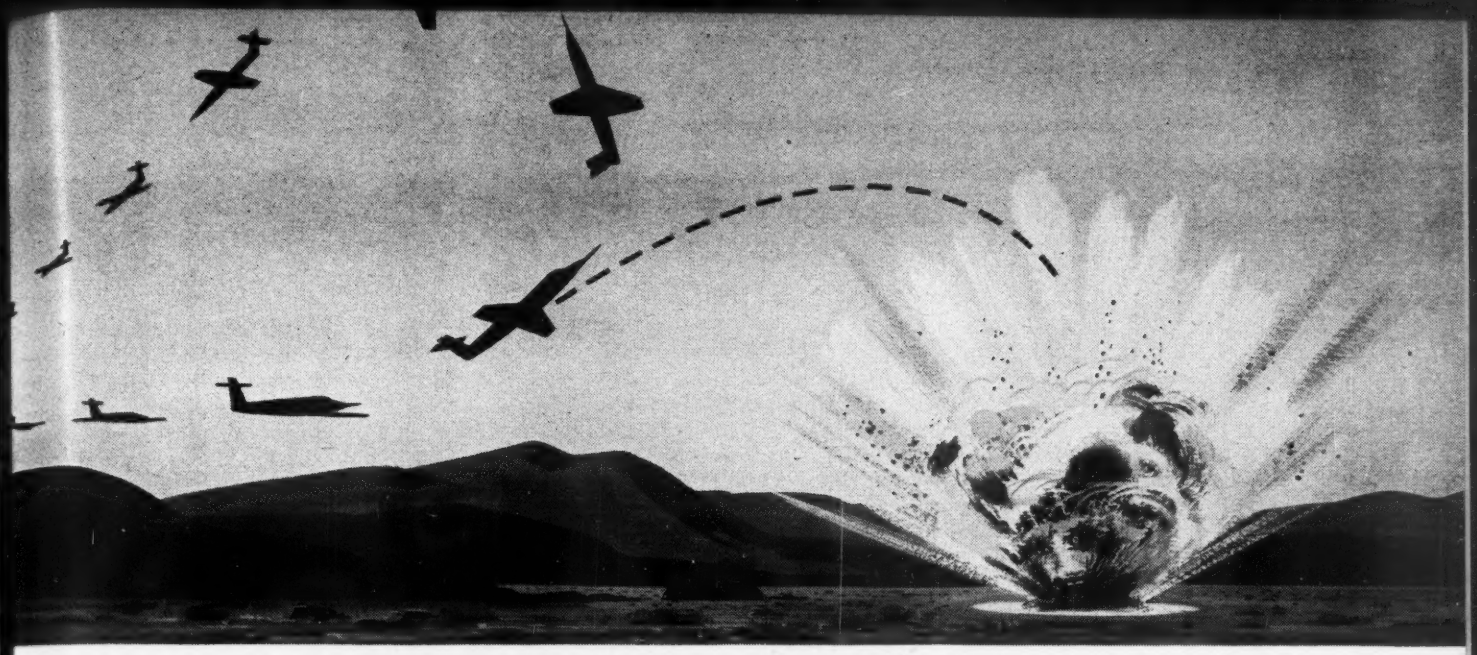

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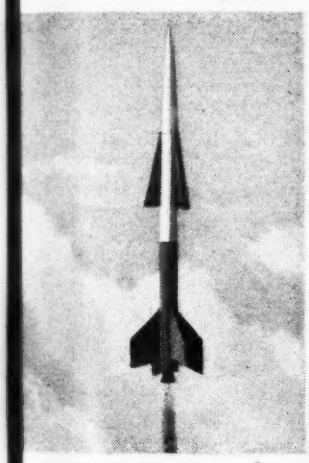

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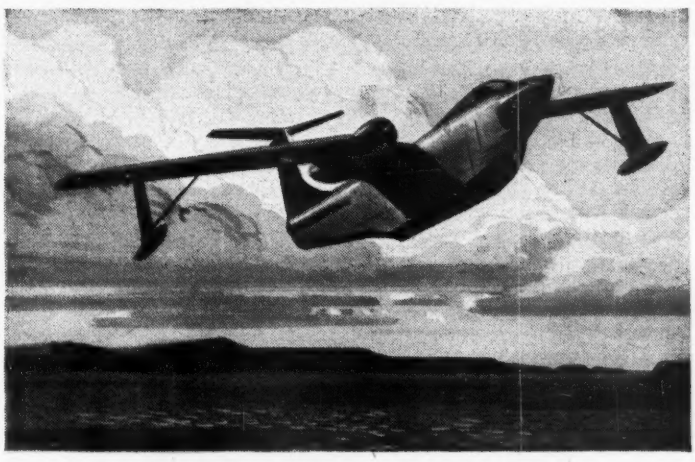

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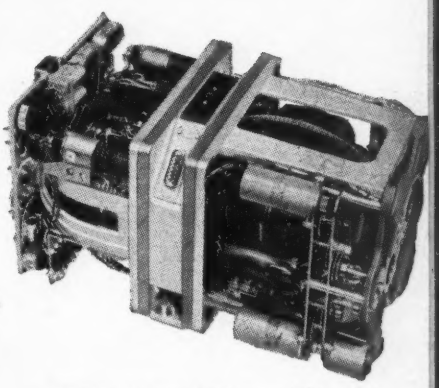

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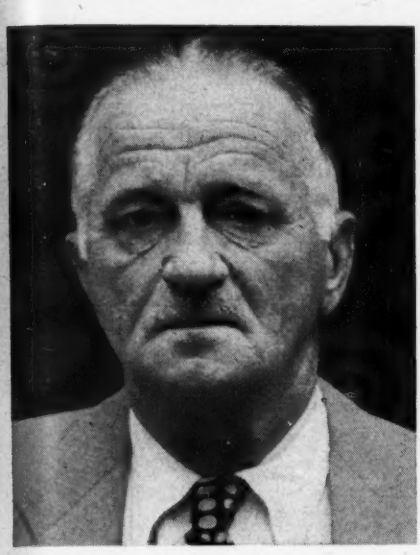


Retired Gen. Carl A. Spaatz, first AF Chief of Staff, who is serving as General Chairman of the celebration.

Honored at dinner given by Los Angeles Aviation Industries during Fiftieth Anniversary celebration, Mrs. H. H. Arnold, widow of AAF's wartime commander, poses with AF officers wearing uniforms of the Air Force from 1907 to 1957.

aces, and Medal of Honor winners; and a list of Air Force historical photographs and files. The kit is an excellent reference library and contains just about everything needed to stage an anniversary event. Two thousand kits were published and have been distributed to key AFA and Air Force personnel.

Many Air Force Association units have already staged Golden Anniversary events in their local areas and many more are planned. The Florida AFA Wing, in conjunction with its annual convention and Jet Age Conference, sponsored an Anniversary Celebration in March. A highlight of the banquet was the presentation of Air Force personalities including pioneers, aces, and outstanding airmen from the Florida area. They also honored the oldest airman, in point of service, at each Air Force base in Florida. The Los Angeles Group, headed by the Los Angeles Metropolitan Squadron, jointly sponsored a Golden Anniversary Week from May 1-5.

In San Diego, a Golden Anniversary celebration was held on May 11, during the California Wing Convention. Following a dinner honoring Charles A. Lindbergh, the celebration began with an Air Force exhibit at Lindbergh Field. Fly-overs by modern aircraft and a replica of the Spirit of St. Louis were followed by a luncheon at which Air Force personnel was honored.

New York City has an ambitious anniversary program scheduled for July 20-21. The AFA WAF Squadron of New York is now sponsoring a USAF Golden Anniversary Essay Contest through local public schools. The essay topic is "The United States Air Force—Guardian of Freedom." The top three winners will receive a trip to the Air Force Academy in Colorado. This is the first such contest sponsored by an Air Force Association unit as part of the Golden Anniversary Celebration.

In Fresno, Calif., Phoenix, Ariz., Dallas, Tex., and Atlanta, Ga., special events are being planned in connection with the annual Ricks Memorial Trophy event for Air National Guard jet pilots, which this year begins at Fresno and terminates in Washington, D. C. Twelve ANG Republic F-84Fs will be competing for the trophy, with refueling stops at Phoenix, Dallas, and Atlanta. The event will take place on July 28, just before the opening of AFA's National Convention. On this same day, an open house and air show will be held at Andrews Air Force Base, where the Ricks Trophy pilots will land. This promises to be the largest aerial exhibit of its kind during the year.

In addition, AFA members have taken part in Anniversary activities in such places as Houston, Tex., where the celebration was held in connection with the dedication of a new Air Guard installation; at Eglin AFB, Fla., where the Doolittle Tokyo Raiders met with AF pioneers in April; in New Orleans, where last month a parade was held honoring the USAF; in Tulsa, Okla., where June 1 was to be Golden Anniversary Day; in Chicago, Ill., where last month AF Secretary James Douglas and AF Gen. Thomas D. White were honored guests; and in Spokane, Wash., where May 27-June 1 was Golden Anniversary Week.

In other events coming up, Colorado plans a Golden Anniversary Celebration the weekend of June 15-16, and the six states of the New England area plan a three-day celebration that will include open house at Hanscom AFB, a Jet Age Conference, and the appearance of the Thunderbirds, the USAF's crack jet aerobatic team.

Golden Anniversary activities are also being planned on July 28 at the Air Force Central Museum, Wright-Patterson AFB, Ohio, at Edwards AFB, Calif., at the Air Force Academy at Colorado Springs, and at Dobbins AFB, Ga.

The objectives of the Golden Anniversary of the Air Force, as decided upon last December, are as follows:

1. To salute the United States Air Force—Guardian of Freedom.
2. To document the impact of the United States Air Force on national progress.
3. To recognize the world-wide humanitarian and civic contributions of the United States Air Force.
4. To stimulate public awareness of the needs of the Air Force, particularly personnel requirements, and assist the Air Force in recruiting and retaining qualified personnel.
5. To focus national attention on the impact of the Air Age and stimulate the interest of American youth in aviation as a career.

During its eleven-year history, the Air Force Association has had many opportunities to serve and work with the United States Air Force in its drive for second-to-none airpower. But its role as the official sponsor of the Golden Anniversary is its most challenging and rewarding undertaking in more than a decade of airpower progress.—END

The READY ROOM

RESERVE AND AIR GUARD NEWS

In the **next three years** approximately 100 Air Force Reserve and Air National Guard units **will convert to newer and more modern aircraft.** The Guard alone, in fact, will convert forty-four of its squadrons to such equipment in the fiscal year beginning next month. This tremendous conversion program is tailor-made for an **increase in the number of aircraft accidents.**

It has been Air Force experience over the years that the accident rate **can be expected to double** whenever a major conversion program, such as faces the Reserve components, is undertaken. Last month, in an effort to

Maj. Gen. Winston P. Wilson, right, Deputy Chief of the National Guard Bureau, presents a Flying Safety award to Maj. Ivan Behl, commander of the 127th Fighter Squadron, Wichita, during the first Reserve Forces Flying Safety Conference, which was held last month at Gulfport, Miss.

find ways to forestall such a possibility, the **first Reserve Forces Flying Safety Conference** was held at Gulfport, Miss.

The Air Force Division of the National Guard Bureau acted as host for the conference, which drew some 450 Guard and Reserve commanders and flying safety officers. **Maj. Gen. Winston P. Wilson** (*see cut*), Deputy Chief of the National Guard Bureau, together with **Brig. Gen. Joseph D. Caldara,** Air Force Director of Flight Safety Research, keynoted the conference with the observations that accidents can be reduced by determined flight safety programs combined with determined command supervision.

In the conversion process, both Reserve and Guard will be faced with **new administrative and logistic problems;** with the requirement to send **large numbers of technicians** to Air Force schools before the new equipment is received; with the problem of **developing instructor pilots** who will be qualified to conduct transition at the home stations; and with the need to **schedule large amounts of flying time** for pilots immediately following check-out rides.

Ten different seminars considered the major problems and three days of deliberations brought forth numerous recommendations. Among these:

- **A flying safety officer,** as a primary duty and on a full-time basis, be included in the permanent technician detachment at each base.
- **Higher headquarters give more help** to units by solving problems beyond the jurisdiction of the local commander, such as providing adequate personal equipment, gunnery ranges, and establishing proper air traffic controls.
- Continental Air Command and the National Guard Bureau **prepare regulations** requiring that unit commanders and operations staffs be fully qualified to perform the unit mission in the aircraft assigned.
- Headquarters, USAF, designate a **coordinating agency** to prepare a **questionnaire** for inclusion in the Pilots' Operating Handbook which would be revised continuously as flying safety supplements are issued.
- ConAC establish a program requiring **dissemination of minutes** of Standardization Board meetings and activities to all units with like missions and aircraft.
- ConAC prepare a **standardized flying training program** and an amplified pilot check list, in more understandable terms, for use in transition.

Such proposals, if adopted, Guard and Reserve commanders believe, will give them a head start toward warding off a definite boost in the number of accidents with the resulting loss of irreplaceable lives and millions of dollars in equipment at a time when equipment is becoming more difficult to obtain.

* * *

Stars fell on Alabama early last month when **twenty-six Air National Guard and Air Force Reserve general officers** (*see cut*) reported to the Air University's War College at Maxwell Air Force Base for the first week-long **orientation course** conducted by the University to bring

The Air War College's first orientation course for Reserve component generals drew twenty-six ANG and AFR officers of star rank. This group, clockwise around the table, includes: Brig. Gen. J. P. Gentile, Maj. Gen. H. C. Kristofferson, Brig. Gen. W. S. Johnston, Col. W. E. Persons, College faculty, Brig. Gen. J. P. Hollers, Maj. Gen. P. M. Hamilton, Brig. Gen. John P. Henebry, and Brig. Gen. M. A. Marrs. The course lasted for one week.

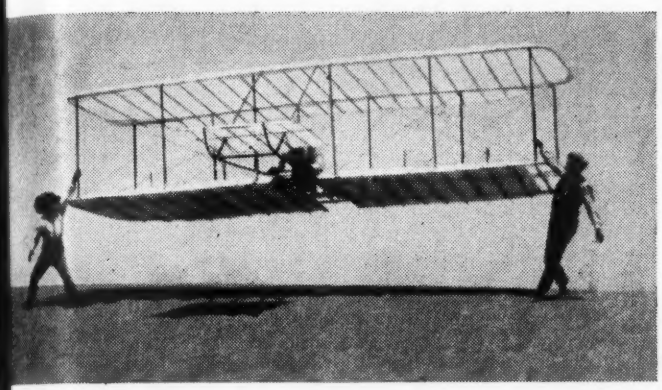
the **Reserve component generals abreast of the Air Force** of today.

Headed by the ranking Reservist in the country, **Lt. Gen. James H. Doolittle,** the Guard and Reserve generals discussed Air Force plans, programs, world-wide developments, and problem areas in concert with members of the Air War College faculty.

Frank discussions on **controversial problems** were encouraged in five days of seminars so that the Guard and Reserve generals might be better equipped, in the event of mobilization, to employ current Air Force doctrine, weapon systems, and operational concepts.

The course, experimental in nature, was adjudged so successful by the University and the students that it will become an annual feature.

—EDMUND F. HOGAN



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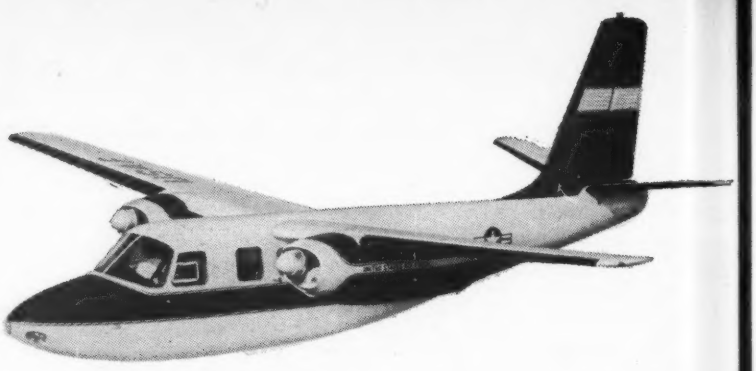
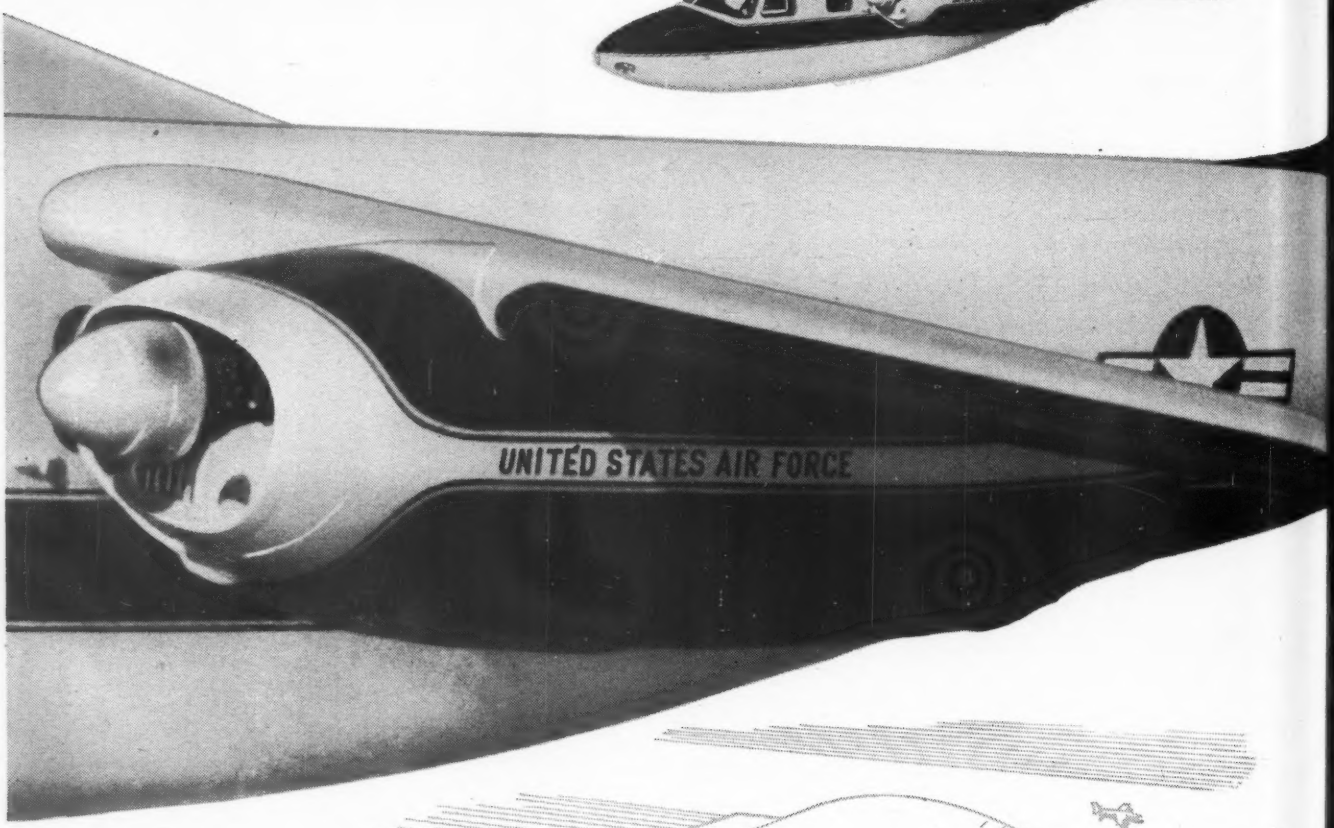
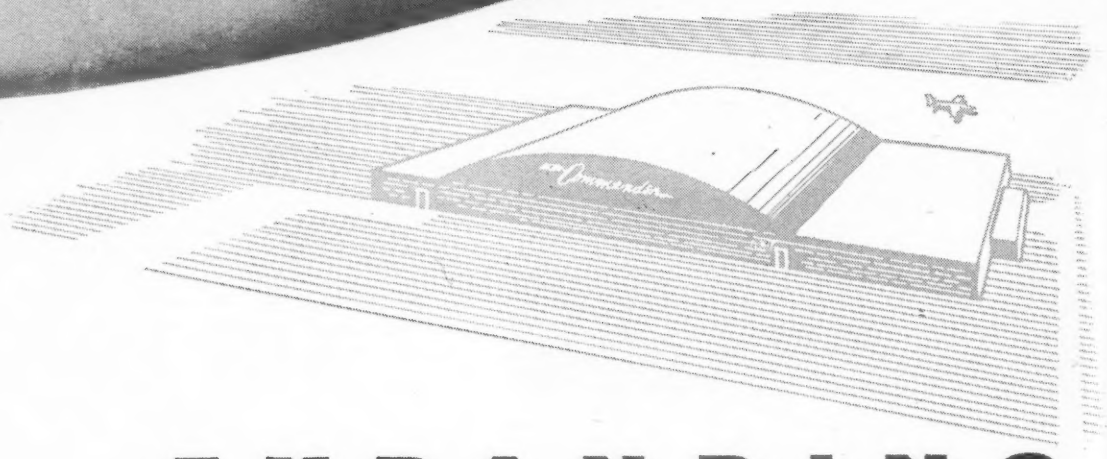
TWO GREAT COMMANDERS

IN THE SERVICE OF THE U.S. AIR FORCE







EXPANDING

Aero Design & Engineering Co, manufacturer of the famous Aero Commanders for Military and Industry, is expanding to more than double present production facilities. The 1½-million-dollar expansion program will provide 46 acres for future growth. As in the past, all facilities will remain entirely Company-owned. The new Aero Commander factory at Tulakes Airport in Oklahoma City will be completed and in operation before the end of this year.

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A Ready Room Feature

What About the Match-Merge Program?

By Col. Carroll S. Geddes

This year the Air Force established a program, called "Match-Merge," for Air Reservists not assigned to units. Briefly, it involves assigning Reservists to mobilization slots by grade and skill. The program is under way. It has created more controversy than any Reserve program yet established. AIR FORCE *Magazine, which has received numerous letters from Reservists all over the country on the subject, has asked an expert to explain the program and the reason for it. He is Col. Carroll S. Geddes, Chief of the Reserve Activities Group, Office of the Deputy Chief of Staff, Personnel, Hq., USAF, in Washington. Here's the story, as spelled out for us by Colonel Geddes.*—THE EDITORS.

IN THE years that the Air Force has had a Reserve program I can recall no phase that has generated so much interest among Reservists and has been so generally misunderstood. If you haven't guessed, the reference is to the current "Match-Merge" program of the Air Force Reserve.

Match-Merge has been called by various names, mostly derogatory. But no matter by what name the program is called, it is definitely not a project aimed at eliminating anyone from membership in the Air Force Reserve. The Air Force is firm in its policy that any Reservist who wishes to participate will be given that opportunity. There is no reason to believe that this policy will be changed.

Match-Merge is a program designed to fit individual Reservists into mobilization assignments by grade and skill. Why do we have such a program? There are three reasons:

First: The Armed Forces Reserve Act of 1952, as amended by the Reserve Forces Act of 1955, requires that each service screen its Ready Reserve forces to insure that these forces are in fact "ready and immediately available" for active duty in the event of an emergency, and to insure that there will be a proper balance of military skills.

Second: The only way in which the Air Force can comply with the law is to establish a valid requirement for the number of Reservists who will be needed should an emergency occur. This has been done on the basis of war augmentation requirements needed to accomplish the missions established by approved war plans. The result—in numbers of Reservists—is roughly 314,000 officers and airmen required to man units of the Reserve and the Air National Guard, and augment the major commands of the Air Force.

Third: It should be obvious that this personnel requirement must be broken down into more than just mere numbers of people. It must actually provide the right number of individuals broken down into required grades and skills.

This is the crux of Match-Merge itself. The Air Force finally has valid and realistic mobilization requirements for individuals as well as for units. These requirements having been established, the next step is to assign a Reservist with the proper grade and Air Force Specialty Code to each Ready Reserve position established by these requirements. In short, Match-Merge is a realistic effort by the Air Force to provide a vital, usable, and truly Ready Reserve.

It is understandable that so many Air Force Reservists are concerned over the personnel actions now being taken by the Air Force to meet and man its war augmentation requirements.

In recent years and, in fact, until valid mobilization requirements were established on February 1 of this year, there were Reservists receiving pay for training against authorizations that cannot now be supported as ready mobilization requirements.

Undoubtedly, as a result of Match-Merge, some officers in the grades of colonel and lieutenant colonel, and some in certain job specialties, will be surplus to the mobilization requirements. Military structures from time immemorial have been erected on specific numbers of grades and skills.

Yet, it would seem that those who believe Match-Merge will make the bulk of the Reserve Forces surplus are worrying needlessly. The new Reserve requirements actually provide more pay status positions than there are now Reservists participating. And the Air Force is just as interested in finding proper assignments for all Reservists desiring to participate as these individuals are in retaining pay drill status.

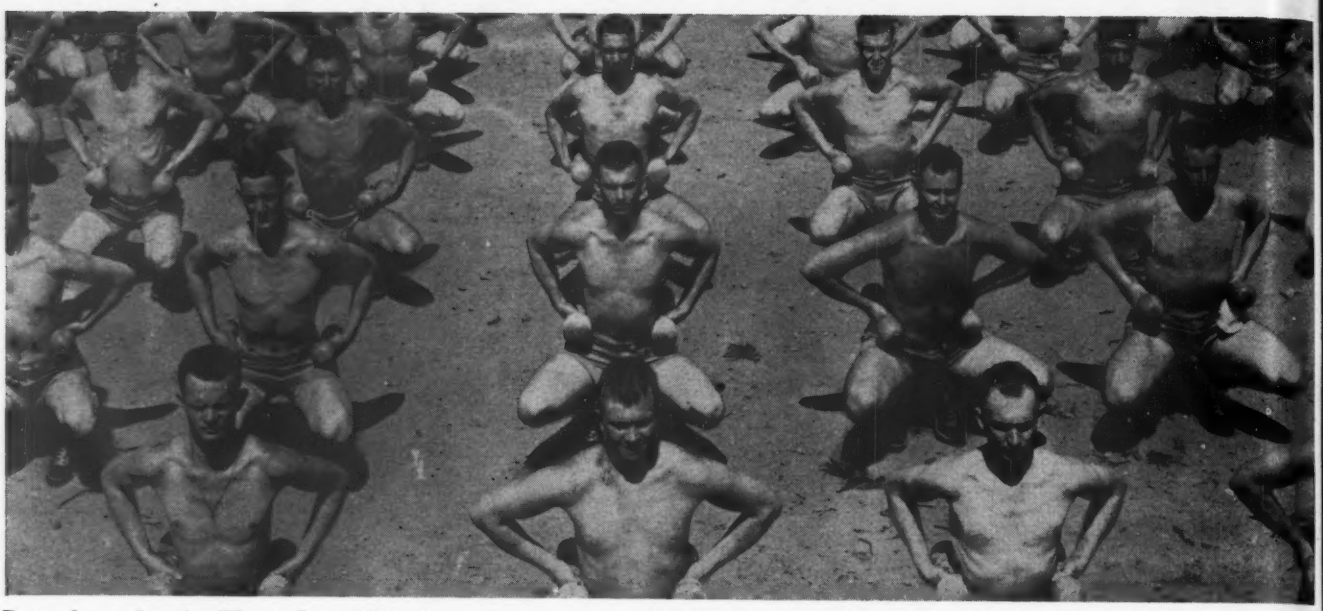
But certain factors do limit the opportunity to make assignments involving paid training. The spending of funds appropriated for Reserve training can be justified only if these funds adequately train individuals who meet grade and skill requirements in support of approved war plans.

It is also obvious that wherever possible Reservists should be so located that they will be able to report promptly to their wartime duty stations, even if transportation facilities become disrupted.

Admittedly, problems do exist with respect to the number of field grade positions available and, in addition, certain job fields are overmanned. In spite of these limitations, the vast majority of Reservists currently in pay status—and thousands of other applicants—should be able to obtain Ready Reserve assignments within the new requirements. In this connection, it should be noted that the Match-Merge process, originally scheduled to be completed at the end of this month, will not be completed for several months for the very good reason that the Air Force wants to assure that all reasonable efforts are made to accommodate Reservists who desire to continue participation in a Ready Reserve status.

We in the Air Staff at Headquarters, USAF, who are charged with the responsibility of administering the Reserve program, truly believe that the Match-Merge project is essential to establishing a really Ready Reserve, capable of meeting the needs for additional trained people which a national emergency will require.

For years Reservists themselves have led the efforts toward the creation of a Ready Reserve. Match-Merge is a long stride in that very direction.—END



Deep knee bends. Physical conditioning takes on new significance with the long missions flown by jet-age aircraft.

AIR FORCE CAREERS

NO. 8 OF A SERIES

MUSCLE MAINTENANCE

By Flint O. DuPre

THE Strategic Air Command's long-range training flights point up an important fact of life of jet-age airpower.

Today's huge intercontinental flying machines, aided by in-flight refueling which is now considered routine, can operate with almost unlimited endurance. Man—the pilot and other crew members—is not similarly endowed.

Lt. Col. James H. Morris, aircraft commander of the lead B-52 Stratofortress on the now historic, non-stop, round-the-world flight last January, puts it this way:

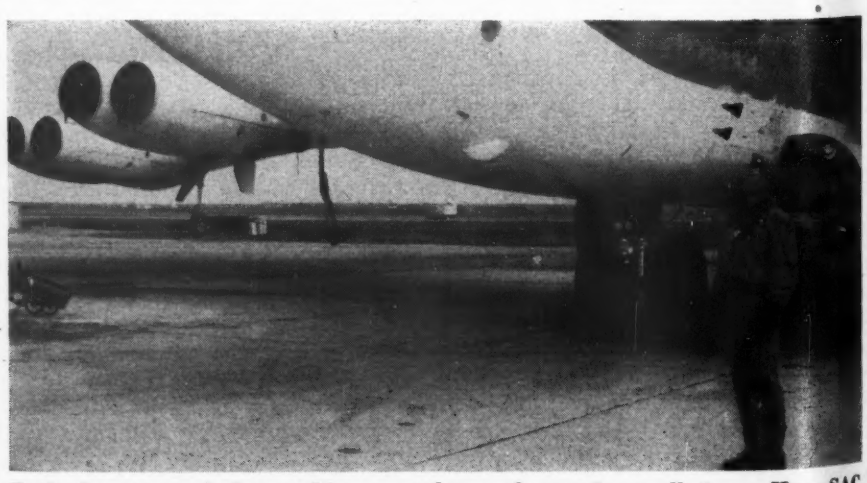
"There's no limit to the flying endurance of the B-52. The only limitations on the duration of flights is the physical endurance of the crew."

This means that physical conditioning specialists in the Air Force—mostly airmen in the AFSC 74150 career field—are in many respects as important as jet mechanics and electronics experts who work on the flight line. Thus, volleyball and group calisthenics become a vital part of any long-range training mission.

Physical conditioning in the armed forces reached its peak during World

(Continued on page 107)

There's nothing more relaxing than a massage after a long mission in a B-52.



Both the man and the machine must be combat-ready at all times. Here SAC Lt. Col. James H. Morris inspects B-52 before beginning pre-flight run-up.

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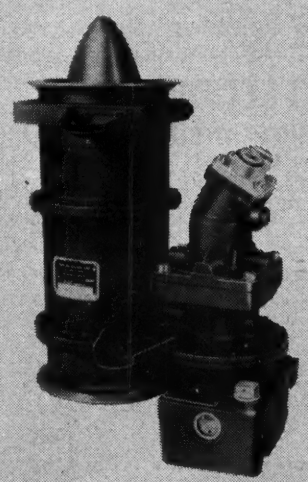

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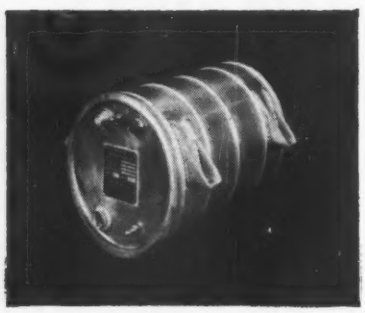
Engineering Beyond the Expected...



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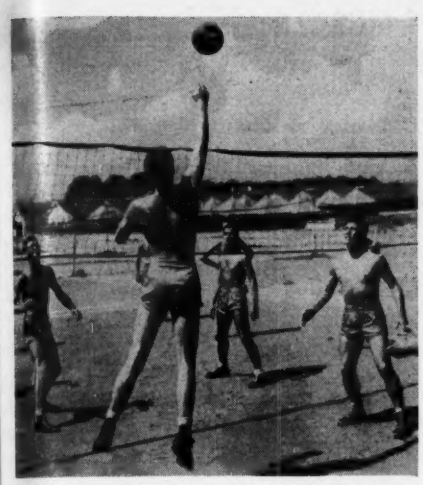
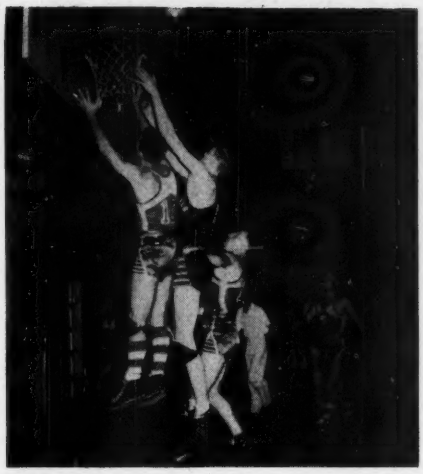


Wherever there's room for a net, you can count on finding a volleyball game.



Basketball is another fast-moving game that Air Force men like to play.

Team sports, like softball, are finding favor in the AF as never before.

MUSCLE MAINTENANCE — CONTINUED

War II when the services cornered the market on muscle men—both college athletes and professionals. Combat records of US fighting forces proved the worth of all those deep knee bends and push-ups. Individual and group physical conditioning has been important ever since, and in the Air Force is not limited to those on flying status.

Air Force leaders are just as concerned with the good health of the so-called desk flyers, or administrative types. Gen. Thomas D. White, the next AF Chief of Staff, became alarmed more than a year ago by the fatality rate of young, aggressive, hard-working senior officers in key positions. He ordered an afternoon of exercise each week for them. This practice is also encouraged for Regulars and Reserves on duty throughout the Air Force.

Such top-level attention to health is a boon to the AF's physical conditioning specialists who both practice and preach good body-building. Suddenly bar bells, softballs, golf clubs, weight pulleys, and other athletic equipment have come out of storage and into popular use. The physical conditioning specialist has become a key man at every base, and individual and team sports have blossomed as never before.

Specifically, physical conditioning specialists in the Air Force instruct and coach personnel in athletic programs. They also conduct physical conditioning programs. They may be involved in football, basketball, track, boxing, wrestling, baseball, or a dozen other sports. They direct calisthenics, dumbbell and hand drills, cross-country and obstacle course runs, judo, combative and guerrilla exercises. In special exercises they help soothe nerves and relax aircrew members before and after long and tiring missions.

To qualify in this career field an individual must have a knowledge of capabilities of the human body and of the purpose and effect of various exercises in physical conditioning. He must know the fundamentals of team and individual sports including rules, officiating, and scoring. Being able to administer elementary first aid is mandatory. Generally, the individual will have completed a physical conditioning course before he turns to the body-building of his fellow airman. In civilian life he may have been an athletic coach, trainer, or physical instructor.

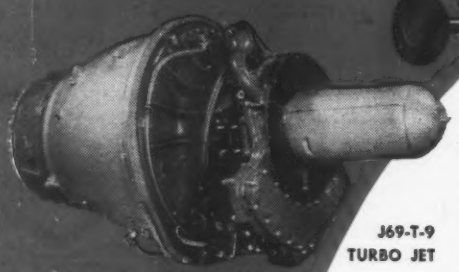
Because of its long-range, mass B-47 and B-52 flights around the North American continent, and around the world, Strategic Air Command has added another dimension to physical conditioning. About seven years ago SAC set up a physical training program for crews, to include a fifteen-hour conditioning course and fifteen hours in judo and hand-to-hand combat. Both courses are musts for aircrews. Thereafter, crewmen are required to keep in shape by taking part in controlled sports three hours a week. Every nine months crewmen must enroll in refresher courses. In this way combative sports are put on a level with the state of training in latest flying and bombing techniques.

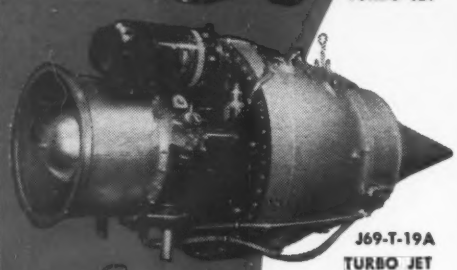
By the time he takes his place in a bomber crew ready for combat, each crew member is well rounded in such fighting arts as judo, karate, and wrestling. He could tackle an opponent in

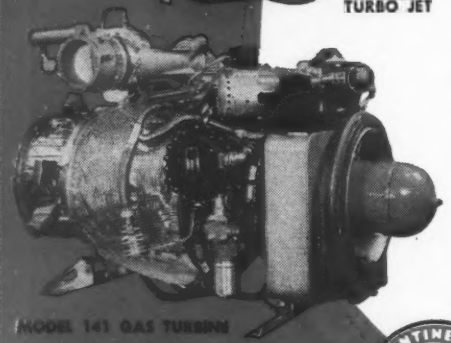
(Continued on following page)

A SAC instructor deals effectively with a knifer in a judo demonstration.

One of the more strenuous ways of staying in trim is by rope-climbing.







CAE power chalked up another record recently, when a Ryan XQ-2B Firebee jet target drone set unofficial world's records of 53,000 feet altitude and 104½ minutes of flight at Holloman Air Force Base.

The J69-T-19A is one of three gas turbines now in production at CAE. A second version, the J69-T-9, powers Cessna and Temco jet trainers for Air Force and Navy respectively, while the Model 141 air compressor is the heart of the TC-106 mobile starting unit for jet aircraft.

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MUSCLE — CONTINUED

hand-to-hand combat and have a good chance of winning.

Why this emphasis? SAC reasons that any of its crewmen may be forced to bail out over enemy territory and find an attacker waiting on the ground for him. A knowledge of the best combative techniques gives the SAC man a strong chance for survival.

During a recent fifteen-hour course in combative measures SAC airmen learned balancing and throwing techniques of judo; striking and kicking methods of karate; holding and takedown skills of wrestling; and club-and-knife intricacies of police fighting.

Concern for its airmen's self defense is not SAC's sole reason for stressing combative training. The net effect of the physical conditioning program is to leave the men remarkably alert, physically and mentally, and well able to endure the gruelling pressures and demands of long missions.

The SAC program started in 1950 when a model conditioning unit was set up at SAC headquarters, Offutt AFB at Omaha, Nebr. The test run proved so successful that Gen. Curtis E. LeMay, SAC Commander-in-Chief, directed that similar units be set up at other bases as rapidly as possible.

This posed the problem of finding qualified instructors. To run the command-wide program, SAC obtained Emilio Bruno, a fifth-degree black belt holder in judo (a top rung in that special field) and a former AAU wrestling champion. To assist Bruno in the field SAC found enough civilian teachers to staff half a dozen bases. This solved part of the problem.

SAC then decided to train its own instructors. Airmen physical conditioning specialists were hand-picked and sent to Kodokan Institute in Japan for advanced training by some of the world's leading experts. These airmen then returned for assignments at SAC bases.

This pioneering in physical culture has spread to other AF commands. They are developing expanded courses of their own, tailored to their own needs. And the physical conditioning specialist in the Air Force is a happy person these days.

The smell of linament mixes well with that of jet fuel.—END

ABOUT THE AUTHOR

Mr. DuPre, an employee in the Office of Information Services, Hq., USAF, has been connected with AF information, both in and out of service, since 1942. Earlier, he was sports editor of the Dallas Journal *and a staff writer for the Dallas* News.

Three Genisco Accelerometers help the Super Sabre close in

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The automatic flight control system, for example, consists of numerous components, each one vital to the performance of the system. Naturally, component reliability is imperative if the plane is to carry out its mission. The flight control system of the F100D incorporates three Genisco Model DDL Accelerometers.

The Model DDL is only one of many Genisco Accelerometers now in use on America's air guardians, including our most important operational guided missiles. Like other models, the DDL was designed for a particular application—to function perfectly in the severe vibrational and shock environment of supersonic flight.

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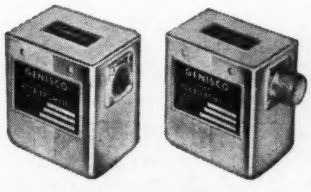
Descriptive technical data on the Model DDL and other Genisco accelerometers will be sent upon request.



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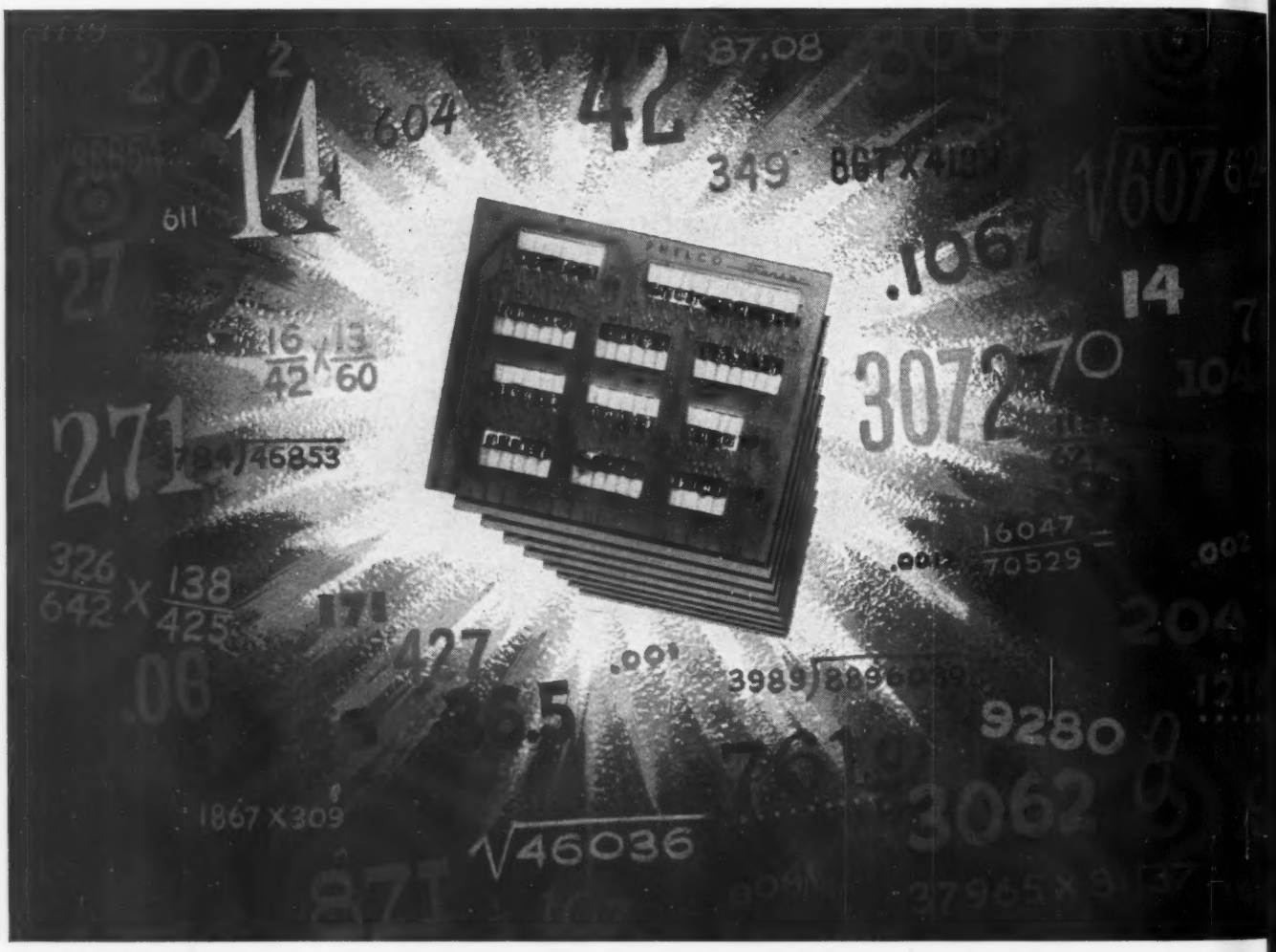

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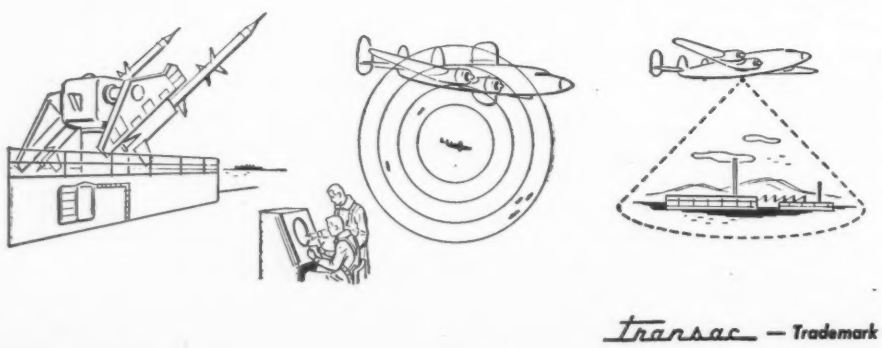

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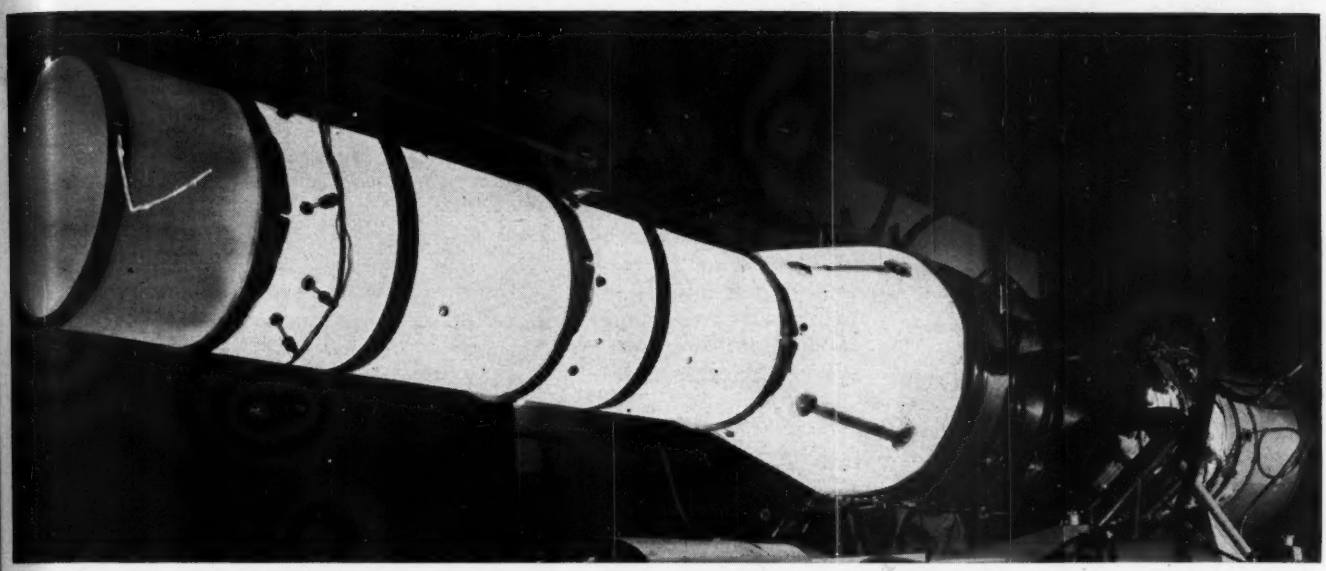
Tech Talk

By Bob Strobell



General Electric's Hot Rod J-47 jet research engine glows cherry red during test at temperature above 1,600 degrees.

High above California's Mojave Desert, two North American F-100 Super Sabres demonstrate the new "Buddy System" of in-flight refueling, which adds range, speed, and bomb load to the Tactical Air Command. Developed jointly by Flight Refueling, Inc., and North American, it lets fighters refuel at normal high speeds and altitudes as they fly straight toward the target.

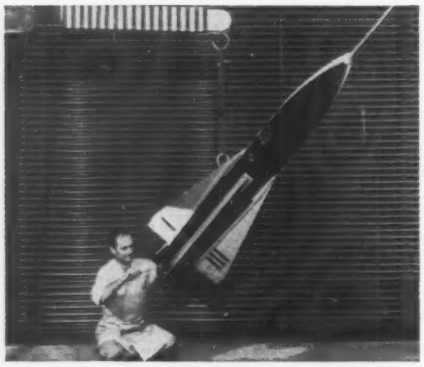
A new development in aerial refueling now makes it possible for the KC-97 Stratotanker to be used for tactical as well as strategic role. Developed by ARDC and Schulz Tool Co., of California, the unique idea combines both the "flying boom" and "probe and drogue" systems. The tanker can now accommodate TAC's F-100, F-101, and the B-66 as well as SAC's B-47 and B-52.

A **Hot Rod jet engine with turbine inlet temperatures greatly in excess of 1,600 degrees** Fahrenheit *(see cut)* has been run at the General Electric's Flight Propulsion Laboratory near Cincinnati, Ohio. The engine is called Hot Rod because of the **unusually high temperatures** at which it operates. Higher operating temperatures in jet engines mean higher or **"souped-up" performance.** The Hot Rod is one of the Flight Propulsion Laboratory Department's research programs to develop better engines for aircraft of the future. The Hot Rod engine, a modified version of General Electric's J-47 turbojet, incorporates a special high-delivery fuel system, a cooling system, and coated molybdenum turbine blades, as well as other design and material changes. By testing new materials in the Hot Rod, General Electric jet engine metallurgists can look at stress and temperature problems that will be encountered in **jet engine operation five to ten years from now.** During the two years it has been in operation, G. E.'s Hot Rod engine has been used to test cermets and castings at far above normal operating temperatures.

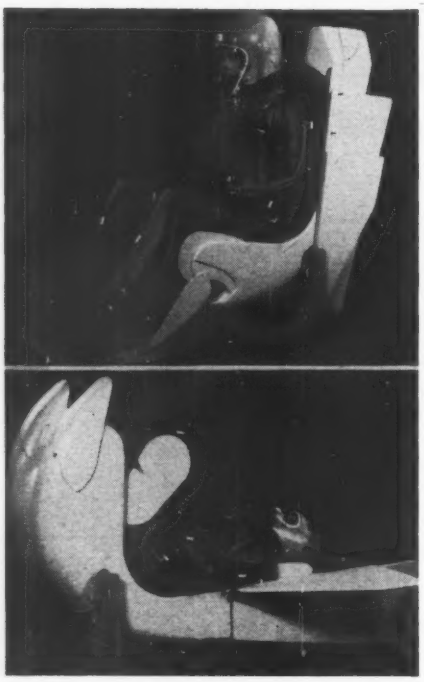
Rocketdyne Division of North American Aviation, Inc., has announced that it has been awarded an Air Force research contract to study the feasibility of **ion propulsion** as a possible source of economical **power for missiles.** An ion propulsion system theoretically would obtain thrust by using high-velocity charged particles, while conventional chemical rockets, ramjets, and turbojets use high-velocity hot gases. Ions are atoms or molecules stripped of one or more electrons. In this form they are energized by electricity to create thrust. Such a system would not produce anywhere near the amount of thrust developed by a **chemical rocket propulsion system.** But at very high altitudes, an ion engine developing a few ounces or pounds of thrust might **accelerate** a vehicle weighing several thousand pounds to great speeds. To move the same vehicle at lower altitudes would require an engine developing thousands of pounds of thrust. Because of low consumption of fuel, an ion engine in theory would operate for several days or weeks.

The US Air Force's jet-powered vertical take-off and landing research airplane, the **Ryan X-13 Vertijet accomplished its first complete flight sequence** from vertical take-off, transition to horizontal flight, and return to vertical landing at Edwards AFB, Calif., in April. The demonstration culminated **eighteen months** of flight

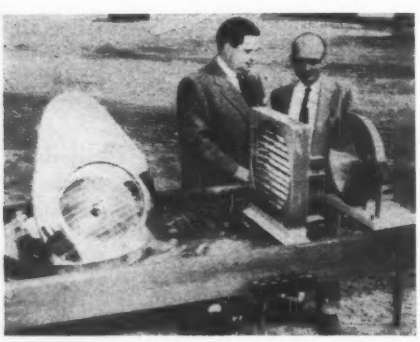
(Continued on following page)



Cornell's bomber defense missile can be fired at attacking enemy aircraft.



Mock-up of pilot ejection seat (top). Rotated ninety degrees (bottom), it ejects horizontally by rocket motor.



Model of solar furnace. When built, it will be the largest in the world.

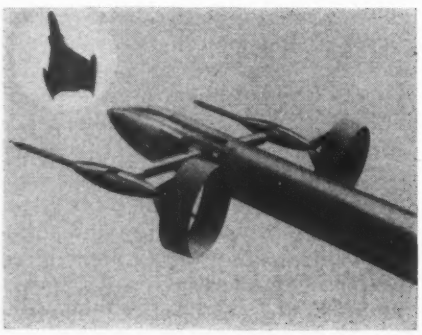
This wind vane device to measure the relatively low speed of vertical take-off and landing (VTOL) flights, has been developed for the Ryan Aeronautical Co. by the Task Corp. of California. Two swiveling heads, located opposite each other on the nose boom, measure flow direction and the pitot-static pressure. Ryan has spent more than 2,000,000 engineering man-hours on research for vertical flights.

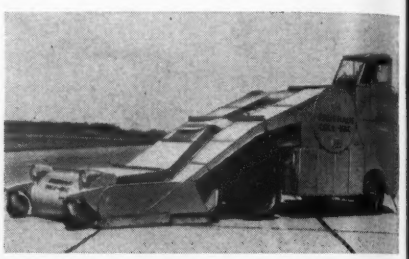
testing of each phase of VTOL flight.

Cornell Aeronautical Laboratory has disclosed the role it played in an Air Force program to develop a **missile capable of being fired at attacking interceptor aircraft from high-speed bombers.** The Buffalo research center said it developed a radically **new system to control the rearward-launched bomber defense missile** (BDM) and built an experimental missile for testing the control system *(see cut).* CAL fired its test missiles from rocket propelled sleds at Holloman AFB, N. M., in 1954 and demonstrated the control system's effectiveness.

A new "aerial bobsled" ejection seat *(see cut)* for supersonic Century Series jet aircraft is being developed by the Industry Crew Escape Systems Committee (thirteen major aircraft companies participating in the seat-development program). **Full-scale models** soon will be exhaustively tested at Air Force rocket sled tracks at Edwards AFB, Calif., and at Hurricane Mesa, Utah. The new seat, which **projects the pilot feet-first and on his back into the supersonic airstream,** is aerodynamically shaped and equipped with stabilizing fins. An explosive charge starts the seat up the rail and on its way out of the cockpit. For the first nineteen inches of its upward path the seat remains in its normal upright attitude. Then a scissors carriage on which the seat is mounted begins to rotate man and seat backward through a ninety-degree arc. The seat clears the cockpit area in less than a second. **A small rocket engine** in the seat then is ignited, and the **seat is separated automatically** from the aircraft. Man and seat are carried forward and lifted above any aircraft structures by both the rocket's propulsive force and by the aerodynamic lift designed into the external contours of the seat itself.

Air Research and Development Command is **developing the world's largest solar furnace,** which will be used by numerous scientific organizations **to develop and test high-temperature materials.** It is expected to be completed early in 1959. The new device should produce **temperatures as high as 8,000 degrees Fahrenheit.** This temperature is about seventy percent of that of the surface of the sun. The furnace will be composed of three basic parts *(see cut):* a heliostat, which is the primary sun-reflecting mirror, measuring 130 feet high and 140 feet wide; the attenuating shutter, a venetian-blind-type device which regulates the amount of sunlight traveling from the heliostat to the parabolic mirror; and the parabolic mirror that collects the sunlight and concentrates it into the focal spot. The solar furnace's basic principle is that extremely high temperatures can be attained by concentrating the energy from a large reflective surface into a very small spot. Probably the greatest use will be studying the effects of rapid temperature changes on metals used in missile structures.

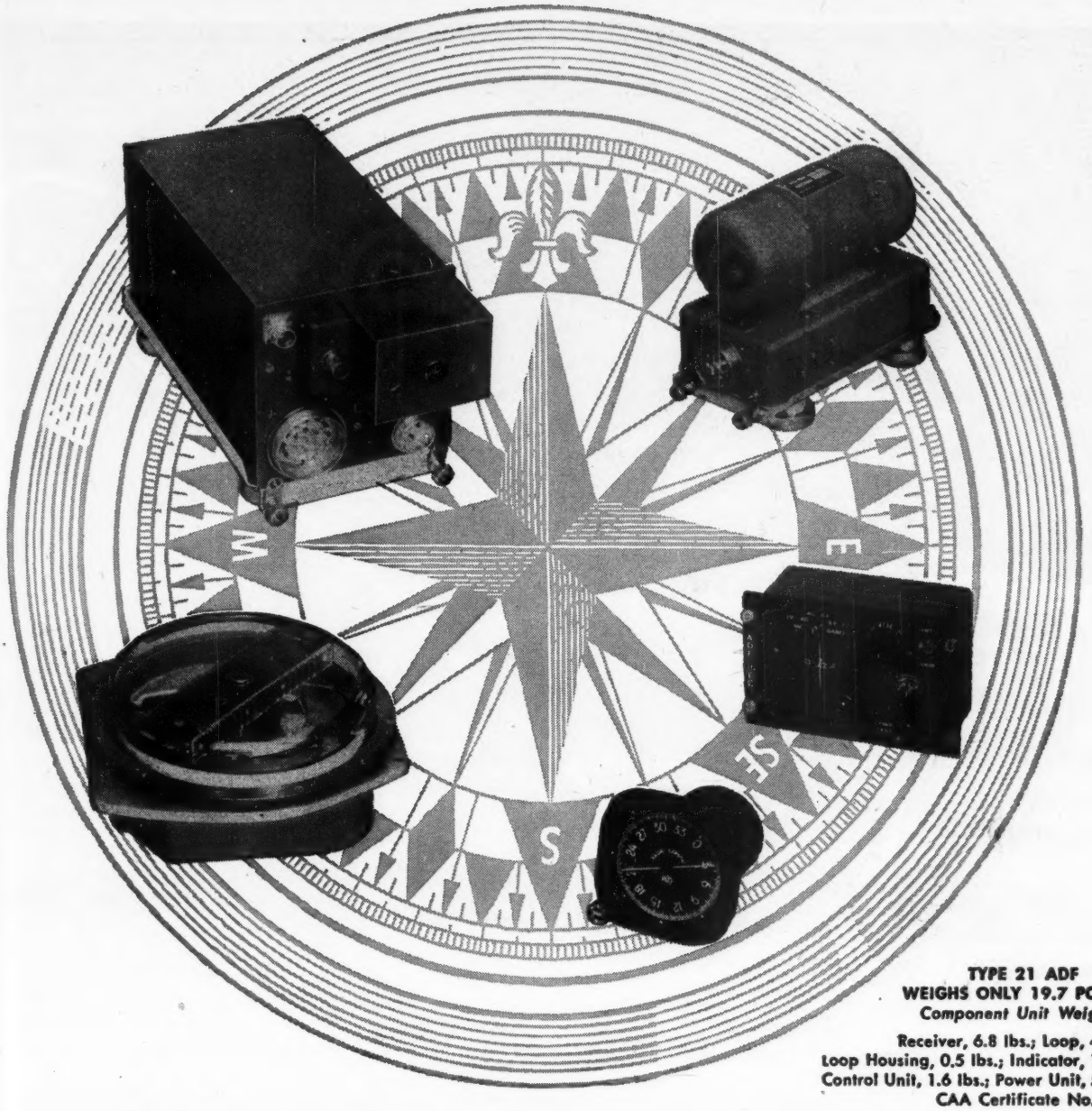




Cole-Vac, a newly developed airfield vacuum cleaner, has been designed by the Coleman Engineering Co. to clean as much as 1,000,000 square feet of runway an hour, cruising along at twenty-five miles an hour. Fruehauf Trailer Co. is producing the cleaner. It will suck up large gravel, bolts, and cans which can damage jet engines.

An airplane that will fly higher than ever before seemed promised in the announcement that **fabrication has begun on the US Air Force X-15 rocket-powered research airplane** at North American Aviation's Los Angeles plant. Wind tunnel tests on the X-15 are nearing completion. Although specifications are classified, the engine's thrust will be greater than the thrust rating of the Bell X-1 and X-2 series aircraft which have been flown at speeds of more than 1,650 mph and at altitudes above 90,000 feet. The X-15 project began after preliminary studies by the National Advisory Committee for Aeronautics to determine the feasibility of developing a research airplane **for exploratory investigations beyond the flight levels of the X-1 and X-2 aircraft.** Reaction Motors, Inc., Denville, N. J., is working on the aircraft's liquid propellant rocket engine.

—END



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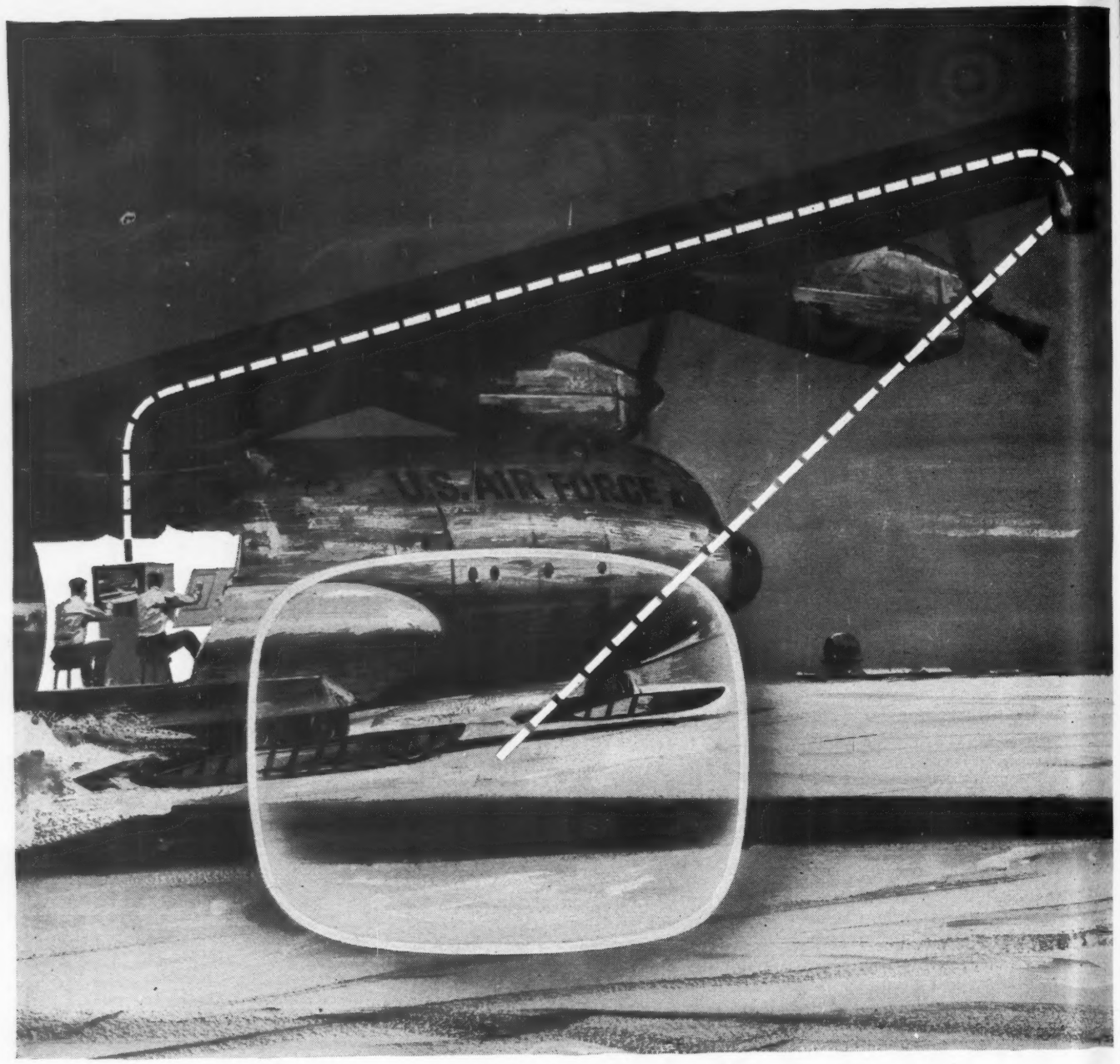

A Knowing Look

When Lockheed wanted to watch the in-flight behavior of the giant skis on their 62 ton C-130 Hercules propjet—they used an IT&T closed-circuit TV system to show engineers inside the plane exactly what was happening.

Closed-circuit television systems developed by International Telephone and Telegraph Corporation are proving to be valuable tools for industry, management, and the military.

When there's a need to see, you can use the eyes of the TV camera to overcome distance, dust, or hazardous locations—even to peer inside a boiler! It takes you anywhere—and sees everything.

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For information about Closed-Circuit Television Systems write Industrial Products Division of IT&T, 100 Kingsland Road, Clifton, N.J.

1958 AFA NOMINEES

PETER J. SCHENK

JOHN P. HENEBRY

The Nominating Committee names Peter J. Schenk for the AFA Presidency with John P. Henebry as Board Chairman

PETER J. Schenk, Santa Barbara, Calif., has been nominated by AFA's Nominating Committee for the Presidency of the Association during 1957-58. The nomination was unanimous and is subject to confirmation by delegates to the Eleventh Annual AFA Convention in Washington, D. C., July 30-August 4, 1957.

The Committee, meeting April 13 at the Air University, Maxwell AFB, Ala., also proposed President John P. Henebry as Chairman of the Board to replace Gill Robb Wilson. Julian B. Rosenthal was nominated for another term as Secretary, with Jack B. Gross, Harrisburg, Penna., receiving the nomination for Treasurer. A full slate of regional vice presidents and directors was also named.

Mr. Schenk is presently Projects Manager in General Electric's Technical Military Planning Operation in Santa Barbara, Calif. A lieutenant colonel in the Air Force Reserve, he has had more than twelve years of active duty including key positions on many research and development projects. He is a graduate of Lafayette College with a BA degree in physics and mathematics. An AFA member for six years, he is now a National Director.

Outgoing President John P. Henebry, whose entire adult life has been devoted to aviation pursuits, made excellent use of that experience during his extensive AFA travels. He is a brigadier general in the Air Force Reserve, a charter member of the Air Force Association, and a former National Director.

PRESIDENT
PETER J. SCHENK
Santa Barbara, Calif.

Electronic management executive; age 36; married. AFA record: Squadron Officer; National Director; Member 6 years.

CHAIRMAN OF THE BOARD
JOHN P. HENEBRY
Kenilworth, Ill.

Aviation corporation president; age 39; married. AFA record: National Director; National Air Reserve Council; Member 11 years.

SECRETARY
JULIAN B. ROSENTHAL
Lake Success, N. Y.

Attorney; age 48; married. AFA record: Assistant Secretary; National Secretary; National Constitution Committee Chairman; Life Member.

TREASURER
JACK B. GROSS
Harrisburg, Penna.

Automobile dealer; age 46; unmarried. AFA record: Squadron Commander; Wing Commander; Assistant National Treasurer; Director; National Committee Member; Charter Life Member.

AFA NOMINATING COMMITTEE'S SLATE FOR 1958

REGIONAL VICE PRESIDENTS

NEW ENGLAND REGION
(Me., N. H., Vt., Mass., Conn., R. I.)
THOMAS C. STEBBINS
Worcester, Mass.

Textile worker; age 45; married. AFA record: Squadron Commander; Wing Commander; Regional Vice President; Member 7 years.

NORTHEAST REGION
(N. Y., N. J., Penna.)
LEONARD A. WORK
State College, Penna.

Postal supervisor; age 42; married. AFA record: Squadron Commander; Wing Commander; Regional Vice President; National Committee Member; Member 11 years.

CENTRAL EAST REGION
(Md., D. C., W. Va., Ky., Del.)
WILLIAM W. SPRUANCE
Wilmington, Del.

Age 40; married. AFA record: Regional Vice President; Member National Air Guard Council; Life Member.

(Continued on following page)

REGIONAL VICE PRESIDENTS

SOUTHEAST REGION
(Fla., Ga., N. C., S. C.)
ALEX G. MORPHONIOS
Miami, Fla.

Sales engineer; age 36; married. AFA record: Squadron Commander; Wing Commander; Regional Vice President; Member 7 years.

GREAT LAKES REGION
(Ohio, Ill., Wis., Ind., Mich.)
JEROME GREEN
Oak Park, Mich.

Engineer; age 34; married. AFA record: Squadron Commander; Regional Vice President; Member 9 years.

NORTH CENTRAL REGION
(Minn., S. D., N. D.)
WILLIAM G. KOHLAN
Minneapolis, Minn.

Attorney; age 44; married. AFA record: Squadron Commander; Wing Commander; Member 10 years.

SOUTH CENTRAL REGION
(Tenn., Ark., Ala., La., Miss.)
FRED O. RUDESILL
Metairie, La.

Salesman; age 50; unmarried. AFA record: Squadron Commander; Wing Commander; Regional Vice President; National Committee Member; National Convention Chairman; Member 5 years.

MIDWEST REGION
(Mo., Kan., Nebr., Iowa)
ARTHUR C. STORZ
Omaha, Nebr.

Brewery executive; age 67; married. AFA record: Squadron Commander; National Director; National Committee Member; AFA Man of the Year 1955; National Convention Chairman; Member 4 years.

SOUTHWEST REGION
(Tex., N. M., Okla.)
HARDIN W. MASTERS
Oklahoma City, Okla.

Investment specialist; age 58; married. AFA record: Squadron Commander; Wing Commander; Director; Member 4 years.

ROCKY MOUNTAIN REGION
(Colo., Wyo., Utah)
GWYNN H. ROBINSON
Colorado Springs, Colo.

Engineer; age 36; married. AFA record: Squadron Commander; Regional Vice President; National Committee Member; Member 10 years.

NORTHWEST REGION
(Wash., Mont., Idaho, Ore.)
JAMES M. TRAIL
Boise, Idaho

State aviation official; age 39; married. AFA record: National Director; National Committee Member; Member 10 years.

FAR WEST REGION
(Calif., Nev., Ariz.)
CURTIS E. CHRISTENSEN
Encino, Calif.

Insurance agent; age 40; married. AFA record: Squadron Commander; Wing Commander; Member 8 years.

PACIFIC OCEAN AREA REGION
(Areas in or bordered by Pacific Ocean)
ROY J. LEFFINGWELL
Honolulu, T. H.

Public relations; age 49; married. AFA record: Squadron Commander; Wing Commander; Regional Vice President; Member 10 years.

NATIONAL DIRECTORS

GEORGE A. ANDERL Oak Park, Ill. Sales director; age 39; unmarried. AFA record: Squadron Commander; Wing Commander; Regional Vice President; National Director; National Committee Member; AFA Man of the Year 1954; Member 10 years.

WALTER T. BONNEY Silver Spring, Md. Government aviation executive; age 48; married. AFA record: National Director; National Committee Member; Member 7 years.

J. ALAN CROSS Miami, Fla. Insurance agency owner; age 50; married. AFA record: Squadron Commander; Wing Commander; National Committee Member; Member 9 years.

A. PAUL FONDA Hagerstown, Md. Aircraft executive; age 48; married. AFA record: Wing Commander; National Committee Member; Member 7 years.

J. WAYNE FREDERICKS Battle Creek, Mich. Foundation executive; age 40; married. AFA record: Squadron Commander; Wing Commander; Member 11 years.

GEORGE D. HARDY Hyattsville, Md. Sales director; age 33; married. AFA record: Squadron Commander; Wing Commander; Regional Vice President; National Director; National Committee Member; Member 10 years.

SAMUEL M. HECHT Baltimore, Md. Department store executive; age 49; married. AFA record: Squadron Treasurer; National Treasurer; National Committee Member; National Convention Chairman; Member 11 years.

T. B. HERNDON Baton Rouge, La. State aviation executive; married. AFA record: Wing Commander; National Air Reserve Council Chairman; Life Member.

JOSEPH C. JACOBS Kaysville, Utah. Civilian AF employee; married. AFA record: Squadron Commander; Wing Commander; Member 4 years.

ROBERT P. KNIGHT White Bear Lake, Minn. State aviation official; age 41; married. AFA record: Squadron Commander; Wing Commander; National Committee Member; Member 4 years.

W. BARTON LEACH Cambridge, Mass. Professor; age 57; married. AFA record: National Director; National Committee Member; Member 11 years.

STEPHEN F. LEO Alexandria, Va. Engineering company executive; age 47; married. AFA record: Squadron Commander; National Director; National Committee Member; Member 11 years.

CARL J. LONG Pittsburgh, Penna. Consulting electrical engineer; age 48; married. AFA record: Squadron Commander; Wing Commander; National Director; Member 11 years.

J. GILBERT NETTLETON Santa Monica, Calif. Aircraft executive; age 40; married. AFA record: Squadron Commander; National Committee Member; Member 10 years.

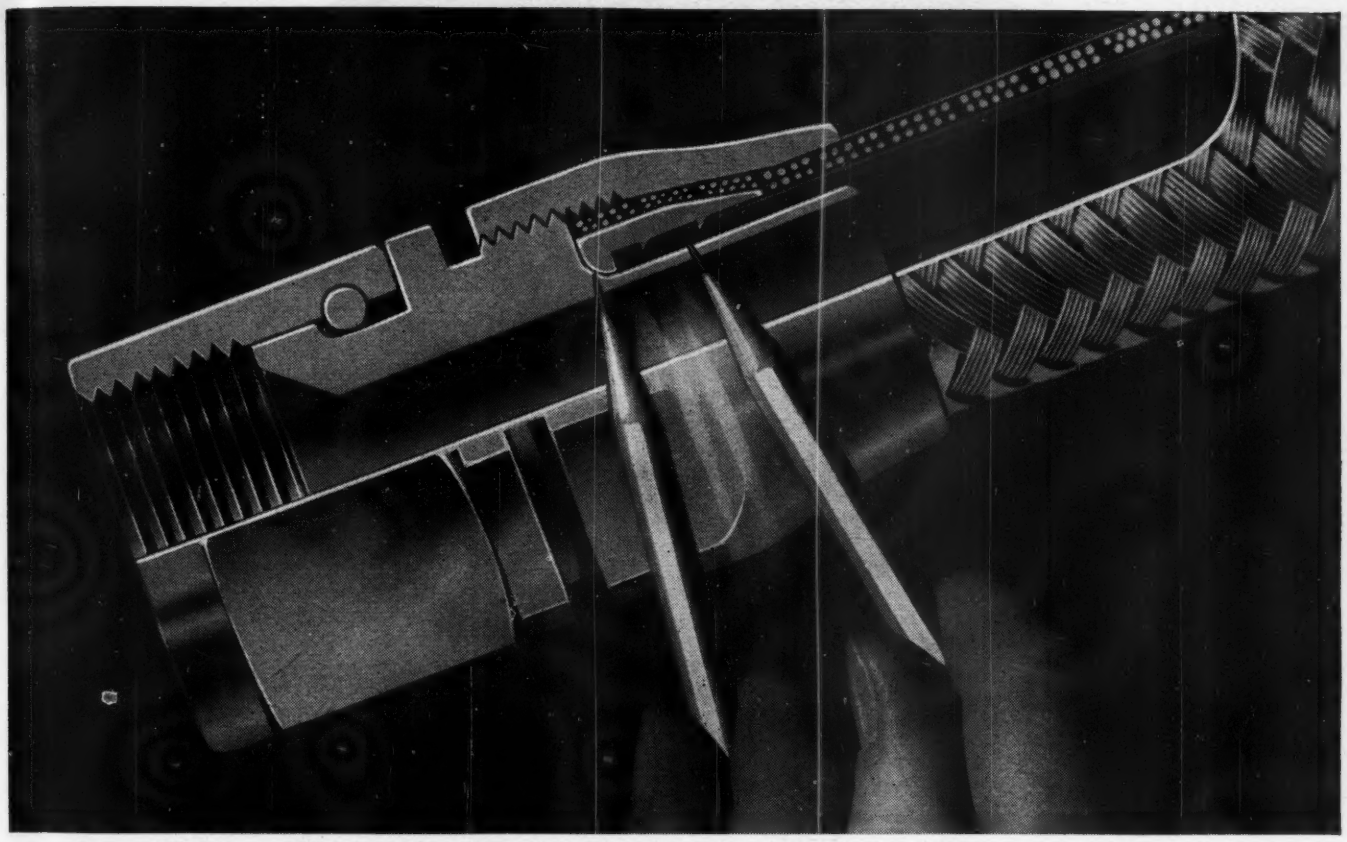
W. THAYER TUTT Colorado Springs, Colo. Business executive; age 45; married. AFA record: Regional Vice President; National Committee Member; Life Member.

S. ERNEST VANDIVER Atlanta, Ga. Lieutenant Governor; age 38; married. AFA record: Wing Commander; National Director; Member 3 years.

T. F. WALKOWICZ New York, N. Y. Investment advisor; age 37; married. AFA record: National Director; National Committee Member; Charter Life Member.

FRANK W. WARD Battle Creek, Mich. Retired; age 44; married. AFA record: Squadron Commander; Regional Vice President; National Director; National Committee Member; Charter Life Member.

NOTE: The following are permanent directors of AFA because of previous service as National President or Chairman of the Board of Directors. They are "automatic" members and need not be renominated or reelected: John R. Alison, Edward P. Curtis, James H. Doolittle, John P. Henebry, Robert S. Johnson, Arthur F. Kelly, George C. Kenney, Thomas G. Lanphier, Jr., C. R. Smith, Carl A. Spaatz, Harold C. Stuart, and Gill Robb Wilson.—END



Cutaway of "*super gem*" Fitting with line seal pointed out at left and lip seal at right. Together they furnish permanent protection against leakage.

The Only Leakproof Teflon* Hose Line!

BECAUSE OF AEROQUIP "*super gem*" FITTINGS

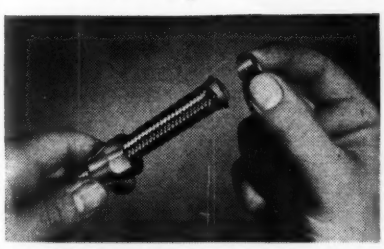
The method of fitting attachment provides the key to successful performance of Aeroquip Teflon Hose Lines in prolonged operation. Aeroquip's unique, "*super gem*" Fittings offer double protection against leakage:

1—a positive metal-to-metal line seal against all pressures.

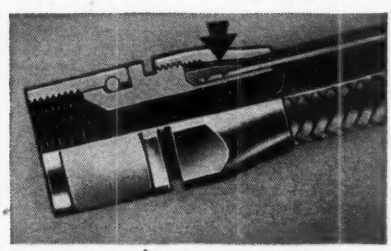
2—a lip seal formed by the Teflon tube seated, but not compressed, in a special chamber within the fitting.

This means that the *hose assembly* life under pressure is as long as the life of the Teflon hose itself—a statement that cannot be made of assemblies using compression type fittings because of the cold flow characteristics of Teflon.

Because "*super gem*" Fittings are reusable and can be readily assembled with hand tools, Aeroquip Teflon Hose Lines offer many design and installation advantages. Fill in and mail the attached coupon for a copy of Aircraft Engineering Bulletin AEB-13.



Mock-ups and modifications are quick and easy because Aeroquip 666 Teflon Hose and Reusable "*super gem*" Fittings can be assembled and disassembled by hand.

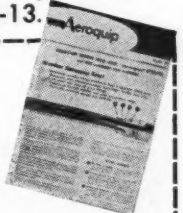


"*super gem*" Fittings grip only the wire cover on 666 Teflon Hose. This avoids possibility of cold flow or compression set which can decrease the effective life of the hose line.

Aeroquip Corporation,
Jackson, Michigan

Gentlemen:

Please send me your Bulletin AEB-13 on reusable "*super gem*" Fittings and 666 Teflon Hose.



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Title_____

Company_____

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THE FLIGHT HEARD 'ROUND THE WORLD

Recently three B-52 bombers flew around the world in 45 hours and 19 minutes. They were only specks in the vastness of the sky, yet they were in voice-contact every mile of the way—with SAC headquarters in Omaha, with each other, with bases along the route and with the KC-97 tankers that refueled them in the air.

Their speed-of-light contact was the AN/ARC-21 liaison communications set in each of the ships. This is a long-range, pressurized, high-altitude airborne system, capable of world-wide communications. It may be operated by the pilot, so no radio operator is needed. It is characterized by minimum training requirements, simplified maintenance, high reliability, positive channel selection —with a choice of any 20 of 44,000 frequencies.

In this as in other ways, RCA serves our Nation's armed forces. RCA scientists and engineers are constantly creating, designing and producing new and better electronic systems and equipment.

RCA

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AFA NEWS

SQUADRON OF THE MONTH

Santa Monica Area Squadron, Calif., Cited for successfully demonstrating the teamwork that is necessary to achieve complete effectiveness in the basic objective of educating the public to an awareness of the airpower concept.

The **San Francisco Squadron** at its March meeting added another success to its **"Airpower in Action"** series. At the March meeting the Squadron played host to all **three B-52 crews** who circled the world non-stop in January. **Brig. Gen. William Eubank,** Commander of SAC's 93d Bomb Wing at Castle AFB, Calif., was the principal speaker.

At the same meeting, the Squadron was honored for the second straight year by the **San Francisco Press and Union League Club.** In recognition of the Squadron's airpower progress and its community standing, a special **"AFA Night"** was held at the San Francisco Press Club. **Tom Barbour** is Squadron Commander.

Unique is the word for the **Los Angeles AFA Group Headquarters.** Theirs is the only AFA organization which functions as a group. All metropolitan Los Angeles Squadrons operate under the group, commanded by **James F. Czach** of San Pedro. When their combined efforts are concentrated on a single assignment, things really move.

A good example is their current **Golden Anniversary Program,** initiated by the **Los Angeles Metropolitan Squadron** and now being implemented by the entire group. Five days were set aside for the program to include model airplane competition, essay and poster contests, and static displays devoted to aviation progress. A banquet at the Hotel Statler, where local aviation pioneers were to be honored, was to climax the event.

Earl McClintock, Commander of the Los Angeles Metropolitan Squadron, is general chairman, and is working with such groups as the Chamber of Commerce, Aero Club, Aircraft Industries Association, and local aviation industries.

The April issue of "AFA News" reported that **Maj. Gen. Charles F. Born,** new AFA Texas Wing Commander, is employed by Temco, in Dallas. General Born has reminded us that, while he greatly admires Temco, he is employed by **Texas Instruments,** for whom he is **Director of Service Engineering.**

New squadrons organized since the last issue include units in **Michigan, Illinois, and Wisconsin,** with another group forming in **California.**

The **Wiley Post Squadron,** St. Clair Shores, Mich., elected **John Pettypool,** 26212 Ursuline, Commander. Other officers are **Nestor Hildebrand,** Vice Commander; **Joseph Wiland,** Secretary; and **Elvin Andreas,** Treasurer. Councilmen are **Paul Schmelzer, A. A. Huybrechts, and Charles Cheriez,** who was instrumental in the formation of this new Squadron.

The **Waukegan Flight** is the newest addition to the Illinois family, it was announced by Wing Commander **Bob Vaughan,** who led the drive to form the unit. **Richard P. Bleck,** 730 Golf Road, was elected Commander. **William Smith** is Vice Commander, and the Secretary and Treasurer are **Richard White and Richard Shultis. Earl Lowen, Leonard Brysky, John Shebenik, and Gordon Tucker** are Councilmen.

In Wisconsin, the **Green Bay Squadron,** under formation last month, has been chartered, with **Mike Guerin,** P. O. Box 416, as Commander. **Art Norgaard** is Vice Commander, and **Otis Pritchard and Hobart DeCaster** are Secretary and Treasurer.

Bill Walker, Los Angeles Area Organization Director for the California Wing, advises us that the new Squadron in **Orange County** has been presented its charter. **John R. Alison and Curtis E. Christensen** were on hand for the initial organization meeting, along with **Walker "Bud" Mahurin,** a Korean jet ace, now with Northrop.

In California, the **San Fernando**

(Continued on page 123)

Parodist Will Aubrey sings in honor of Brig. Gen. William Eubank at dinner given for AFA by San Francisco Press Club. Shown are Capt. Bob Stephenson, Mike Kavanaugh, Capt. Charles Fink, Tom Barbour, Ed Montgomery of San Francisco *Examiner*, General Eubank, Boeing's Harold Mansfield, Maj. George Kalebaugh, and Capt. Ernest Campbell. Officers were members of the round-the-world B-52 flight.

John R. Alison, Past AFA President, jet ace Walker Mahurin, and AFA Wing Commander Curt Christensen (standing) were guest speakers at first meeting of new Orange Co., Calif., Squadron. Seated is Bob Brooks, the California Wing Secretary, while Elwood T. Miller signs the Charter. The Charter was formally presented by AFA President John P. Henebry at the California Wing Convention on May 11.

Register NOW for . . .

AIR FORCE ASSOCIATION'S 1957

National Convention and Airpower Panorama

Celebrating the Golden Anniversary of the USAF

JULY 31 - AUGUST 4 • WASHINGTON, D. C.

TOP SPEAKERS—The Hon. James H. Douglas and Gen. Thomas D. White will head a group of more than twenty top-flight speakers who will address the five-day Convention. Mr. Douglas, who became Secretary of the Air Force in April, will address the Awards Banquet on August 3. General White, who takes over as Chief of Staff in July, will address the Airpower Luncheon on August 2. The theme of the Airpower Symposium—"The Economics of National Defense"—is a subject of great importance to all of us. The Air Research and Development and the Air Materiel Briefings on July 31 will feature remarks by the Commanders of AMC and ARDC. Speakers at the Reserve Forces Seminar will include officials from ConAC, Hq., USAF, and the Air National Guard.

ANNIVERSARY DAY—August 1, the fiftieth birthday of the US Air Force, will include a Memorial Service, first-day issue of an Air Force commemorative postage stamp, an Anniversary Banquet at noon, and three Anniversary Balls that evening. Many of the men who helped make Air Force history will be on hand for the Anniversary program.

REGISTER NOW—The form below is for use in registering in advance for the Convention. Man and wife can be registered on the same form by checking "LADIES" and attaching the additional $25 fee. Only by advance registration can you be assured of a seat in the banquet hall and select the Anniversary Ball you wish to attend. Only employees of AFA Industrial Associate companies are eligible for "INDUSTRIAL" registration. The $25 registration fee shown below covers all of the events listed in the *Convention Program* at right. The $35 fee covers the *Convention Program*, plus *Industry Day*. There is no registration fee for the Airpower Review, the Reserve Forces Seminar (Reserve Banquet and Reception $5 per person), the Airpower Panorama, and the Memorial Service.

James H. Douglas **Gen. Thomas White**

PRE-CONVENTION EVENTS

AIRPOWER REVIEW
Andrews Air Force Base

SUNDAY—JULY 28:
2:00 PM: Aerial & Ground Demonstrations
USAF Thunderbirds
Finish of Ricks Jet Flight

RESERVE FORCES DAY

TUESDAY—JULY 30:
1:00 PM: Reserve Forces Seminar
5:00 PM: Reserve Forces Reception
6:30 PM: Reserve Awards Banquet

INDUSTRY DAY

WEDNESDAY—JULY 31:
9:00 AM: Air Materiel Briefing
12:15 PM: Industrial Luncheon
2:30 PM: Research & Development Briefing

CONVENTION PROGRAM

WEDNESDAY—JULY 31:
9:30 AM: AFA Leaders Meeting
2:30 PM: First AFA Bus. Session
7:00 PM: Panorama Preview Reception

THURSDAY—AUGUST 1: *Anniversary Day*
9:00 AM: Air Force Memorial Service
10:00 AM: Airpower Panorama
USAF Stamp Ceremony
12:30 PM: USAF Anniversary Banquet
9:00 PM: Anniversary Balls

FRIDAY—AUGUST 2:
9:00 AM: Second AFA Bus. Session
10:00 AM: Airpower Panorama
12:30 PM: Airpower Luncheon
Fashion Luncheon
3:00 PM: Airpower Symposium
7:00 PM: Reunion Cocktail-Buffet

SATURDAY—AUGUST 3:
9:00 AM: Third AFA Bus. Session
10:00 AM: Airpower Panorama
2:00 PM: Final AFA Bus. Session
7:00 PM: Awards Banquet

SUNDAY—AUGUST 4:
9:30 AM: Airpower Brunch

Complete, Clip, and Mail to AFA, 324 Mills Building, Washington 6, D. C.

ADVANCE REGISTRATION FORM FOR 1957 AFA CONVENTION

NAME..... RANK.....

TITLE.....

AFFILIATION.....

ADDRESS.....

CITY..... STATE.....

Please check ONE of the following categories with which you wish to be identified in the attendance record:

( ) GOVERNMENT ( ) ACTIVE MILITARY ( ) AFA
( ) INDUSTRY ( ) RESERVE GUARD ( ) .....

* *INDUSTRIAL REGISTRATION ($35) restricted to personnel of AFA Industrial Associate Companies ONLY, and includes INDUSTRY DAY plus the CONVENTION PROGRAM.*

I ( ) AM ( ) AM NOT AN AFA MEMBER

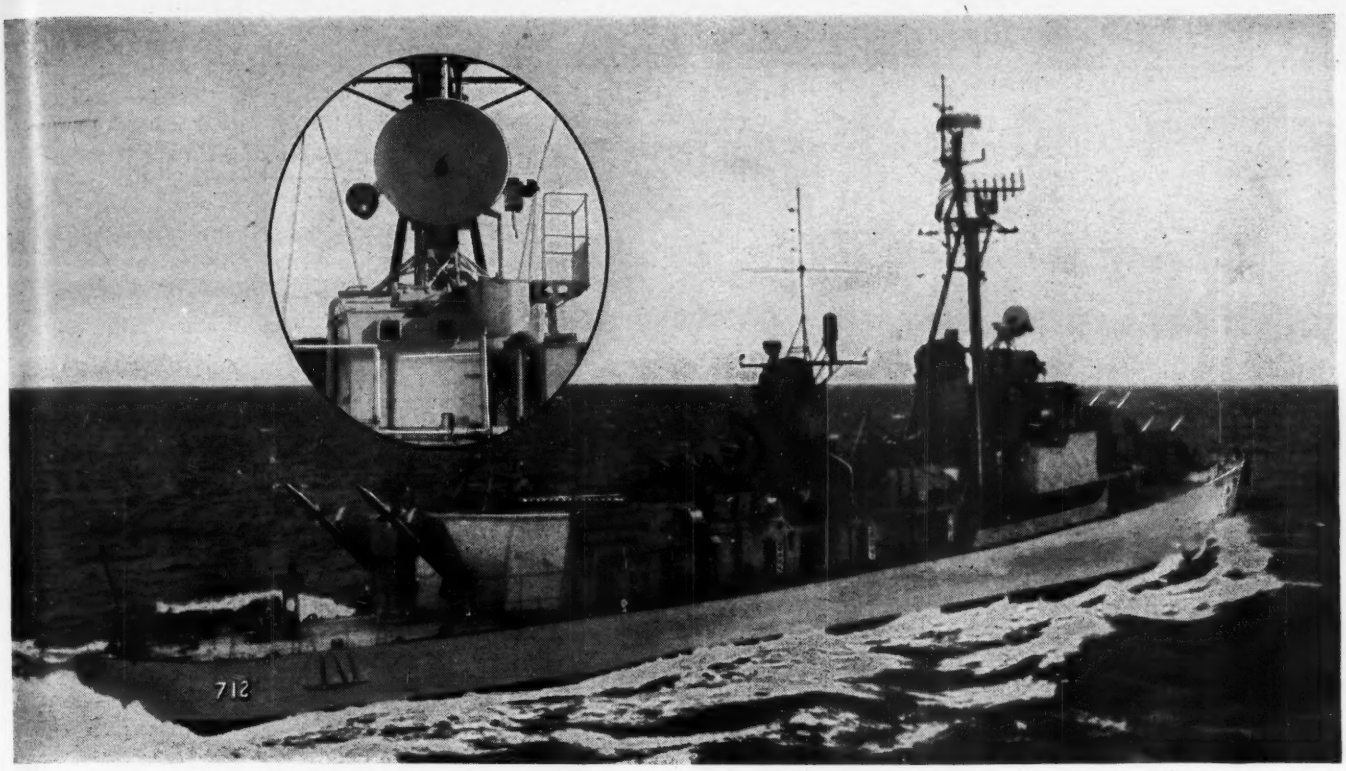
Check the type(s) of registration desired and attach full payment:

( ) MEMBER $25
( ) LADIES $25
( ) INDUSTRIAL* $35

TOTAL: $

Please check the ANNIVERSARY BALL you wish to attend August 1:

( ) AMERICAN THEATER
( ) ASIATIC-PACIFIC THEATER
( ) EUROPEAN-AFRICAN-MIDDLE EASTERN THEATER



Official Photo U. S. Navy

unique dual-role radar guidance system by Reeves INSTRUMENT CORPORATION

Developed for U. S. Navy Bureau of Ordnance

Twin Terrier Missile Launchers, shown in this official Navy photo on the after-deck of the USS Gyatt, give the world's first guided missile destroyer an atomic-age weapons system equal in range, accuracy and striking power to that usually associated with a 45,000-ton ship.

Key to this successful installation of the supersonic Terrier system in the close quarters of a destroyer is the unique new Reeves **combined** automatic missile radar guidance and fire control system, developed out of Reeves' experience with previous successful Terrier installation "firsts" in the cruiser USS Boston and in the battleship USS Mississippi.

While serving the dual role of automatic radar tracking and guidance for the Terriers, as well as fire control for the destroyer's 3" and 5" guns, this new Reeves system is compact (as shown by inset photo above), has great range and precision, and is capable of self-monitoring. It requires few operating personnel.

Here is yet another example of Reeves' close and highly successful association with the U.S. Navy and other branches of the Armed Forces in many of the military electronics projects that have been or will be recorded as dramatic "firsts" in their fields. Reeves research, engineering and unique precision manufacturing facilities are specifically geared to this pioneering tempo.

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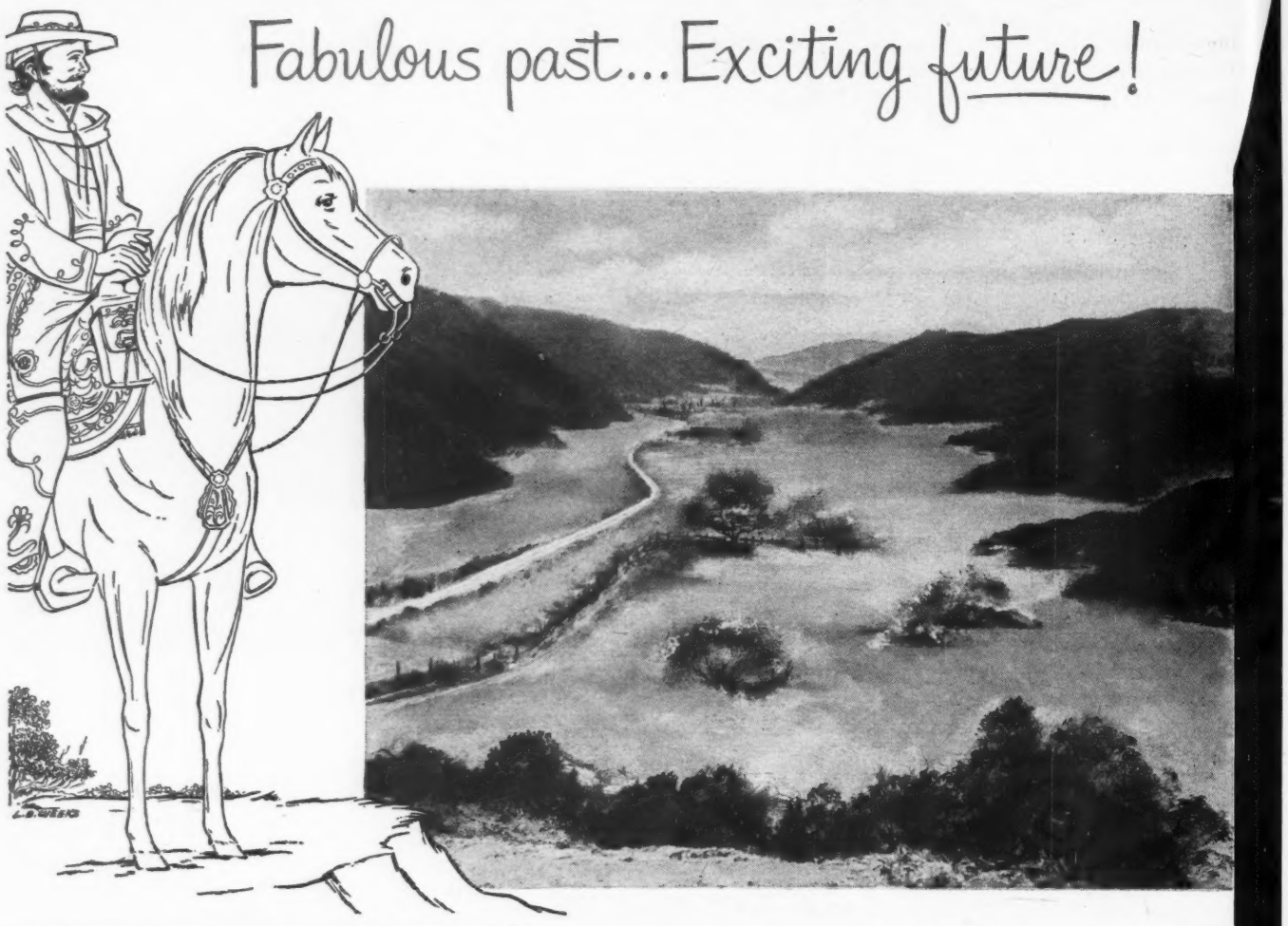

8000 ACRES OF ISOLATION

Fifteen miles from Redlands, California, in 8000 mountainous acres once charted as part of a vast Spanish land grant, Grand Central Rocket Co. has set up a new rocket test facility.

This section of California has a colorful and romantic past. Nearby are graceful missions built by the Spanish padres nearly two hundred years ago. Among the mountains are deserted mines and "ghost towns" recalling the era of the gold rush. The test site itself has yielded the remains of an Indian settlement. This is the land that knew such men as Kit Carson and John C. Frémont.

Great men of the past depended on vision, daring, and leadership to accomplish their goals. Grand Central is using these same principles in the greatest adventure of our time — the conquest of outer space.

Minutes away, fertile valleys with prospering towns and cities beckon to the science adventurer of today. To investigate your *career potential in healthful and friendly inland Southern California, contact the Personnel Manager.*
Inquiries held confidential.

Grand Central
Rocket Co.
REDLANDS, CALIFORNIA

GRAND CENTRAL ROCKET CO.
REDLANDS CALIFORNIA

Valley Squadron and Auxiliary jointly participated in the fifth annual **installation dinner** in March at the Hangman's Tree Restaurant, Tarzana, Calif.

Comedian Vince Barnett, a perennial favorite at AFA conventions, was Toastmaster for the dinner, and introduced the principal speaker, **Remi Nadeaux,** an Air Force Reservist and candidate for the Los Angeles City Council. Mr. Nadeaux stressed the need for airpower advocates in state, city, and federal government positions.

Awards went to several Squadron members who have distinguished themselves in AFA work. **William Scroggins** was installed as the Squadron Commander for 1957-58. **Mrs. Phyllis Christensen,** wife of the current California Wing Commander, became President of the Auxiliary Unit, one of the most active in the state.

The annual installation banquet of the **Hanscom Squadron, Lexington, Mass.,** was an educational as well as a social success this year.

The program included a **symposium** on the future activities of Hanscom AFB, with presentations by **Lt. Col. Charles Collins,** Instrumentations Chief at Massachusetts Institute of Technology; **Lt. Col. Virgil Sheppard,** Air Force Cambridge Research Center; and **George Wood,** Information Officer for the Center.

Massachusetts Wing Commander **Phil Coury** and several other Wing officials were among the honored guests attending the banquet.

Chicago's Southwest Squadron sponsored a tour of **O'Hare International Airport** recently for thirty **students** from Kelly and Hyde Park High Schools, giving them a close look at Air Defense Command and Air National Guard facilities at O'Hare.

Lt. James Dvorak, 126th Maintenance Squadron (ANG), was Escort Officer for the briefing. The students also met with **Lt. Col. William Chum,** Commander of the 168th Fighter Squadron, and discussed jet fighter tactics.

Leonard Luka, Southwest Commander, was Chairman of the program, and went with the group. **Maj. Dale Miller,** of O'Hare, made all arrangements for the day's activities.

The **H. H. Arnold Squadron** of Long Island completed its four-part airpower program the weekend of May 18-19. Some 300 teachers, principals, and guidance counselors participated in the program, appropriately called **"Classroom in the Sky."** Immediately following, the educators were given an **aerial tour of Long Island** as guests of commercial carriers in the area. The entire program took place at MacArthur Field where the featured speaker was **Dr. John Furbay,** aviation education specialist with Trans World Airlines.

At Charter meeting of the St. Paul, Minn., Squadron, Leo Goodrich, left, the Squadron Commander, is shown with Col. Robert L. Gould, Commander, Duluth AFB, the guest speaker for the program; and Brig. Gen. Ray S. Miller, USAF (Ret.), a Charter member. Wing Commander Bill Kohlan presented the Charter.

The following day, 200 selected students were also treated to an aerial tour of Long Island as a feature of the **"Long Island Pioneer Day"** program. To qualify for the flight, students entered **an essay contest** sponsored by the Squadron in cooperation with local high schools. The essay subject was **"Aviation Today and Tomorrow,"** with the best 200 youthful writers receiving the one-hour flight. In addition, the four top winners were specially honored.

The weekend activities climaxed a four-part program started by the Squadron last autumn to acquaint citizens of Long Island with the **impact of aviation** on their everyday life. The first two programs highlighted aviation industry on Long Island and examined what it contributes to the community as well as to national defense, and took up the careers open to young people in military service.

(Continued on following page)

Jack Rettaliata, left, Long Island Pioneer Day Chairman, and Ray Zobian, Roslyn science teacher, right, look on as Merike Konendant and Bill Feverbach post notices of essay contest results *(see text)*. Both are pupils at Roslyn High School. The program is sponsored by AFA's H. H. Arnold Squadron.

Jack B. Rettaliata, Public Relations Director for **Grumman Aircraft Engineering Corp.,** who served as program chairman, said, "Pioneer Day gave the students an opportunity to see for themselves that aviation offers careers that point to the future." We agree and congratulate the H. H. Arnold Squadron for its timely treatment of a vital and most interesting subject.

Cautioning against the temptation to become **complacent about airpower progress, AFA Executive Director James H. Straubel** told a Dayton, Ohio, audience late in April that "We must not forget the lessons of the first fifty years of the Air Force." Mr. Straubel was the principal speaker at a banquet given by the **Douglas Aircraft Co.,** in honor of the unveiling at the AF Central Museum, Wright-Patterson AFB, of one of the **Douglas "World Cruisers"** that flew round-the-world in 1924.

The surviving crew members of all the World Cruisers, as well as the crew of the 1949 globe-girdling B-50 **Lucky Lady II,** and the crews of the **SAC B-52s** that circled the world nonstop in January were honored guests at the ceremony. CBS news analyst **Lowell Thomas** was master of ceremonies, and AMC Commander **Gen. E. W. Rawlings** was host at the base, while **Donald Douglas, Jr.,** was host at the Biltmore Hotel where the banquet was held. Among the guests was **Don Wohlford** of Akron, Ohio Wing Commander.

CROSS COUNTRY. . . . Several AFA Squadrons have participated in the community programs welcoming the Warner Brothers' picture **"The Spirit of St. Louis"** to their cities. Among them have been Squadrons on **Long Island,** as well as **Philadelphia, Washington, and Cleveland.** In many of these cities **Jimmy Stewart** *(see cut),* star of the film, took part. Stewart, an active Air Reservist, is presently serving on two national AFA committees, and is a former member of the Board of Directors. . . . A feature of the annual **Fiesta Tropicale,** big community celebration in **Hollywood, Fla.,** is the torchlight parade. This year the **Hollywood Squadron** was selected to receive an award for its entry. . . . Two changes in **Wing convention dates** have been announced: **Massachusetts** will hold its meeting on June 22, and **Wisconsin** on June 20. Previously the dates were June 1-2 for Massachusetts, and June 22 for Wisconsin. . . . AFA's Miss Airpower, **Joanne Alford,** is currently winding up the last trip on her nationwide tour during which she has spoken to thousands of high school students in dozen of cities in all sections of the country.

—Gus Duda

On visit to Philadelphia, film star Jimmy Stewart accepts Squadron Citation from Commander Dave Kurtz, as Past Commander Joe Dougherty looks on.

MAIL YOUR RESERVATION REQUEST NOW!

AFA National Convention & Airpower Panorama

WASHINGTON, D. C. ★ JULY 30-AUGUST 4, 1957

More than 1,800 persons have reserved hotel rooms for the Convention. The Sheraton-Park and Shoreham Hotels, headquarters, have been "sold out" of both rooms and suites for weeks. *Do not* request reservations at either of these hotels. Excellent accommodations are available at the other hotels. The Windsor Park, across the park from the Sheraton-Park, has a number of apartment-type suites at reasonable rates. The hotels below are listed according to distance from the Sheraton-Park. The Continental is suggested for Panorama exhibit personnel.

AFA Hotels and Room Rates

HOTEL	SINGLE	DOUBLE	TWIN
Sheraton-Park	Sold Out	Sold Out	Sold Out
Shoreham	Sold Out	Sold Out	Sold Out
Windsor Park*	$9.00	$12.00	$12.00
Dupont Plaza*	9.50	12.50	12.50
Woodner*	None	13.50	13.50
Mayflower*	9.00	14.50	16.50
Statler*	11.50	15.00	16.50
Lee House	8.50	12.00	12.00
Burlington	7.50	10.00	10.00
Ambassador	7.50	11.00	12.00
Hamilton	7.00	10.50	10.50
Continental	7.00	9.00	10.00

* *Suites available—one bedroom, $25; two bedroom, $40. Above rates are averages—lower and higher rates are available.*

Mail to:

AFA HOUSING OFFICE
Convention & Visitors Bureau
1616 K Street, N.W., Washington 6, D. C.

DATE_____

NAME_____

ADDRESS_____

CITY & STATE_____

HOTEL_____ (FIRST CHOICE) _____ (SECOND CHOICE) _____ (THIRD CHOICE)

_____ (TYPE ROOM) ( ) Low ( ) Average ( ) High (DESIRED RATE)

ARRIVAL DATE & HOUR_____

DEPARTURE DATE_____

OTHERS IN ROOM_____

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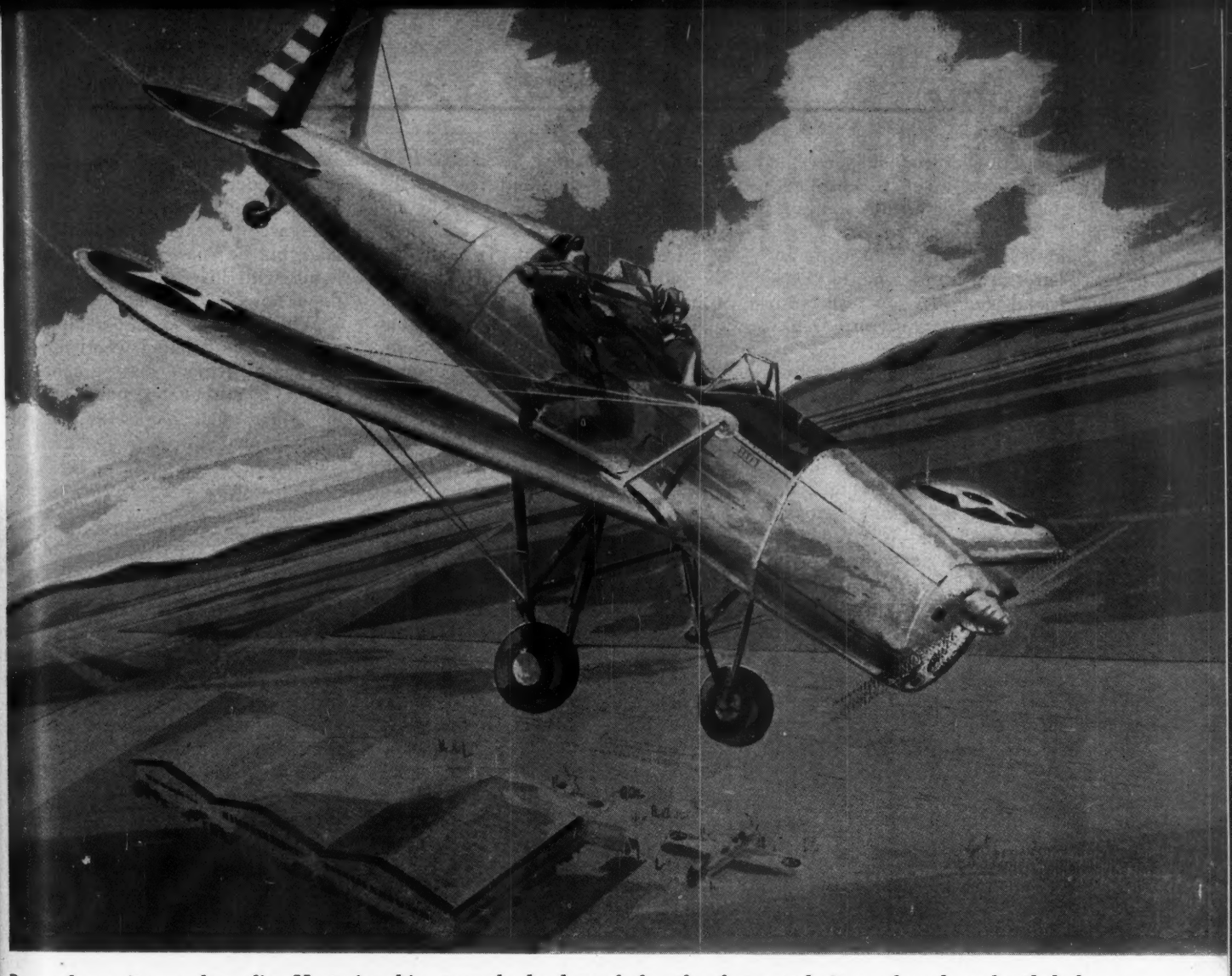

Danny knew it was do-or-die. Mustering his strength, he lunged for the front cockpit as the plane hurtled down.

Once in a while, we all

GOOF A LITTLE

By David F. McCallister

AUTHOR'S NOTE: *This is a true story, but the names and numbers of the players and the locations have been changed to protect the guilty, who is a friend of mine.*

THE five o'clock beer call at O'Brien Field was going full tilt when 2d Lt. Danny Danielson appeared on the scene wearing a long, disappointed face. Wearily he plunked down in a chair and silently poured himself a glass of beer from the pitcher on the table.

"Turned down again, Danny?" Lieutenant Baringer asked. The young second lieutenants seated at the table looked at Danny, waiting for the answer that they knew was forthcoming. Danny nodded his crew-cut blond head resignedly.

"Looks like I'll spend the rest of my life teaching these cadets how to fly that PT-21."

"We're all in the same boat, Danny," Baringer replied. "Any one of us would give his right arm to get into a fighter outfit."

Danny didn't reply. He just sipped his beer and wondered if the war would pass him by—before he once got a shot at a German or Jap aircraft. It had been more than a year since the Japs had bombed Pearl Harbor. Danny had been teaching students how to fly in civilian life for three years before that infamous day. After flying nearly two thousand hours, he felt that he should get a crack at the Japs, or at least an opportunity to instruct at a fighter RTU.

(Continued on following page)

"What did Old Ironpants have to say about your letter requesting a combat fighter assignment?" Baringer asked.

"Said if I bothered him with another letter he'd transfer me to Oogahonk Island where I'd tow targets for the rest of my military career," Danny replied unhappily.

"Ugh," Baringer replied distastefully, "the Army Air Corps' Devil's Island."

The other lieutenants joined in the conversation and for two hours sipped beer and dreamed aloud about flying P-40s, P-51s, and P-47s. One even said he'd take a P-38, and was promptly doused with beer for even mentioning a twin-engine aircraft—a nasty word in a single-engine pilot's vocabulary.

"Say, Danny," Baringer said, "did you hear about that student bailing out this afternoon after you left?"

"No. What happened?"

"The kid said he was flying along minding his own business and suddenly the control stick broke at the bottom."

"What did he do then?" Danny asked anxiously.

"Threw it over the side and followed it down."

"Why, that stupid idiot!" Danny exclaimed, gaining the attention of the group. "Why didn't he jump out on the wing, walk up to the front cockpit, and climb in?"

The lieutenants howled at the suggestion.

"What's the matter with that?" Danny asked seriously, irritated by their jeering.

"Come now, Danny," Baringer said. "You wouldn't expect anybody in his right mind to climb out of the rear cockpit of a PT-21 and then climb into the front cockpit while it was still airborne, would you?"

"Certainly. Why not?" he asked.

The crowd jeered louder.

"Have you ever heard of anybody doing it?" Baringer asked.

"No. But that doesn't mean it can't be done."

"I don't think it can be done," Baringer said.

"It can, too," Danny retorted.

"Can you do it?"

Danny pulled at his beer and thought for a moment.

"Well," Baringer asked, "can you?"

Danny looked at the faces staring at him and realized he was cornered.

"You're damned right I can do it! And what's more I'll show you it can be done at high noon tomorrow right over the middle of O'Brien Field!"

High noon came all too soon the next day for Danny. But he was up there at three thousand feet in the rear cockpit of a PT-21 at the appointed hour. His cohorts had been sworn to secrecy about the stunt, but like all military secrets it spread around the base at twice the speed of light. As Danny looked down thousands of eyes looked back up at him. One pair belonged to Old Ironpants, who was taking an extremely dim view of the exhibition.

Approaching the middle of the field, Danny wondered if he shouldn't give up the crazy scheme and let discretion become the better part of valor. The thought fled as he realized the humiliation he would suffer if he backed out. His fellow flyers would never allow him to live it down.

Easing back on the power, he unfastened his seat belt, then pulled the nose of the aircraft above the horizon. Hurriedly, he raised one leg over the cockpit and put a foot on the wing. Instantly, the aircraft began diving and rolling to the left, the earth taking on a different appearance than when he was seated in the cockpit. Slipping back into the cockpit, he righted the aircraft and swung around the field for another try.

This time he breathed a little heavier as he pulled the nose above the horizon and banked to the right to offset the drag of his body on the left wing. With the engine popping and spitting, he quickly climbed out of the cockpit and got two feet on the wing. No sooner had both feet touched the wing when the aircraft began diving and turning to the left again. Frantically, he leaped for the control stick in the rear cockpit; and with half his body and both legs lashed by the increasing speed of the slipstream, he righted the little trainer and pulled himself back into the cockpit, thoroughly shaken by the ordeal.

Once again he looked down at the crowd three thousand feet below. He realized the feat was much more difficult than he had anticipated, and in his immediate future he could foresee a shadow of impending doom. In the worst way he wanted to call it off and land, but he knew there would be no living with his cohorts if he backed down now.

Whirling around the field for another try, he debated whether or not he should remove his parachute so that he could have greater freedom of movement. One glance at the cold, hard ground far below chased the thought from his mind.

At the field boundary he chopped the throttle again and pulled the nose extremely high, and just as it was about to stall he banked steeply to the right. With a do-or-die determination he leaped onto the wing and inched forward, clutching the edge of the rear cockpit with his right hand. The left wing began falling out from under his feet, and the nose began dropping below the horizon. His breath came in short, fast gulps, and he knew he had committed himself too far to get back in the rear cockpit. Mustering all his strength, he lunged for the front cockpit and grasped the edge with his fingers. Down the aircraft plunged, out of control!

Utter destruction seemed imminent as he fought against the sinister slipstream. With a mighty effort he inched his body forward and made a frantic lunge for the control stick and caught it! Half out and half in the cockpit, he righted the bird. Then, trembling in every part of his body, he climbed into the cockpit.

Although a hero among his fellow instructors, young Danny was not appreciated by Old Ironpants, who chewed him up one side and down the other until only his bare frame remained. When there was nothing more left to chew, the sentence was pronounced:

"And for the remainder of your military career you will tow targets at Oogahonk Island. Your disciplinary transfer will become effective as of today."

Danny took it all in his stride, and for the first week at Oogahonk Island he saw little except the inside of an AT-6 tow-target plane that towed targets that nobody seemed to hit. At the end of the sixth day he walked over to his CO, who was studying a target with very few holes in it.

"Sir," Danny said, "if I couldn't shoot any better than that, I wouldn't have the guts to wear a pair of pilot wings."

The CO was taken aback. So much

(Continued on page 131)

ABOUT THE AUTHOR

Dave McCallister admits this story's about a good friend of his, who's now in Washington. The friend could likely tell us a few stories about McSnapper, who's pretty colorful himself. Now Chief Test Pilot for All-American Engineering Co., in Delaware, he makes soup, is a caterer, and sells his own jet navigational device, the "Soup-Cutter." He's the father of six, commands the Air Guard's 142d Fighter-Interceptor Squadron at New Castle AFB, and won last year's AFA Ricks Memorial Trophy event for ANG pilots.

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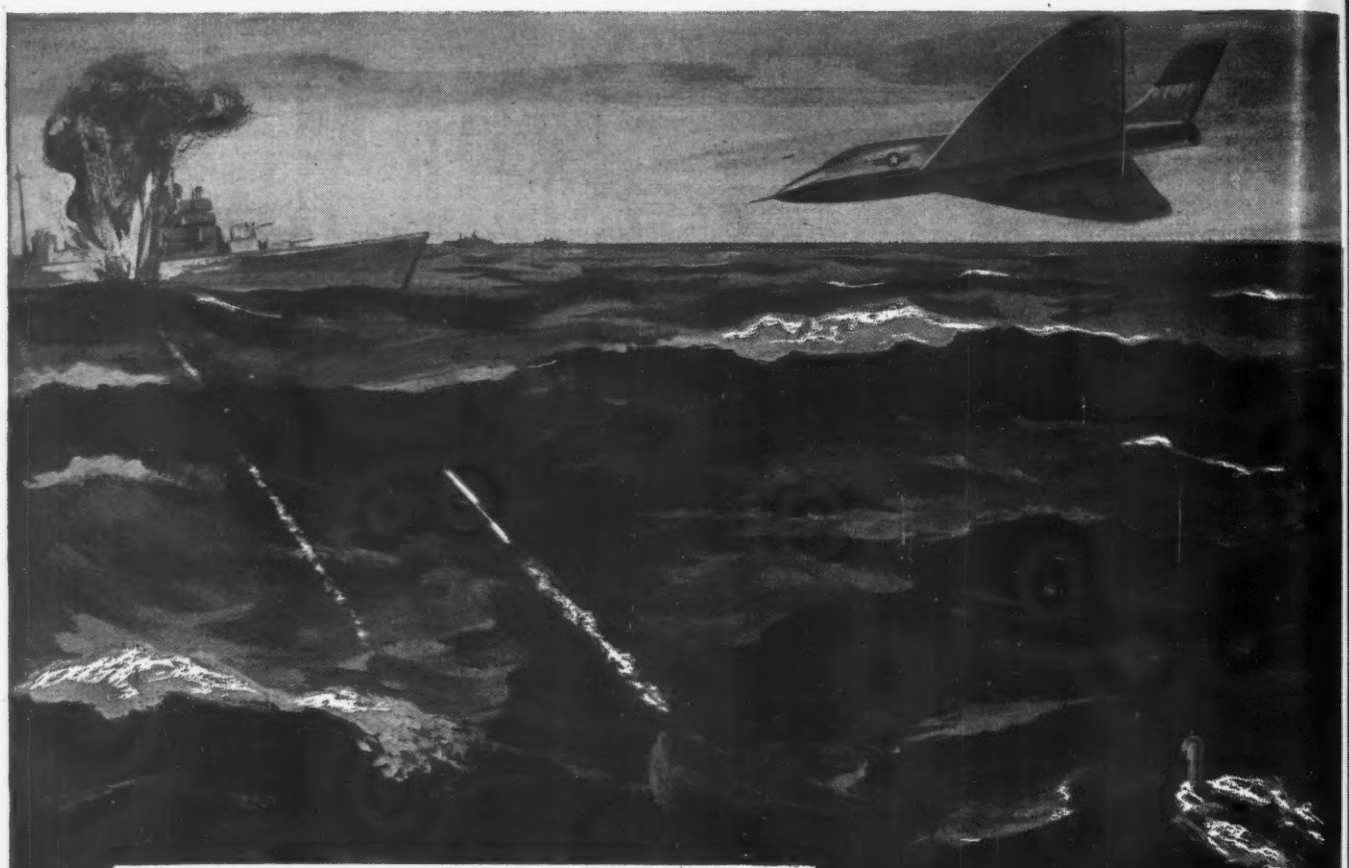

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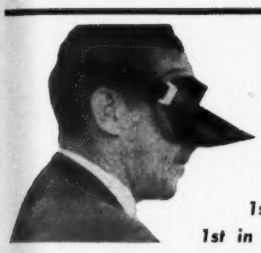
"It was easy," Danny replied. "In this man's Air Corps you've got to goof up a little if you want to get ahead."

After a combat tour in WW II and another in Korea, Lt. Col. Danny Danielson still retains his keen sense of humor, but has changed considerably. The tiny crow's feet that once lined the corners of his eyes have become eagle's talons, the mark of a combat fighter pilot. And although he laughs when he tells this story to his friends, he's quick to admit that he used up his entire bag of luck on that one stunt.—END



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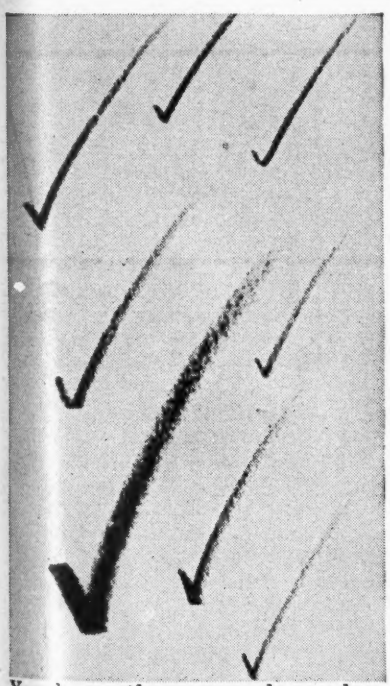

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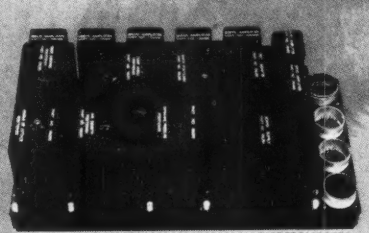

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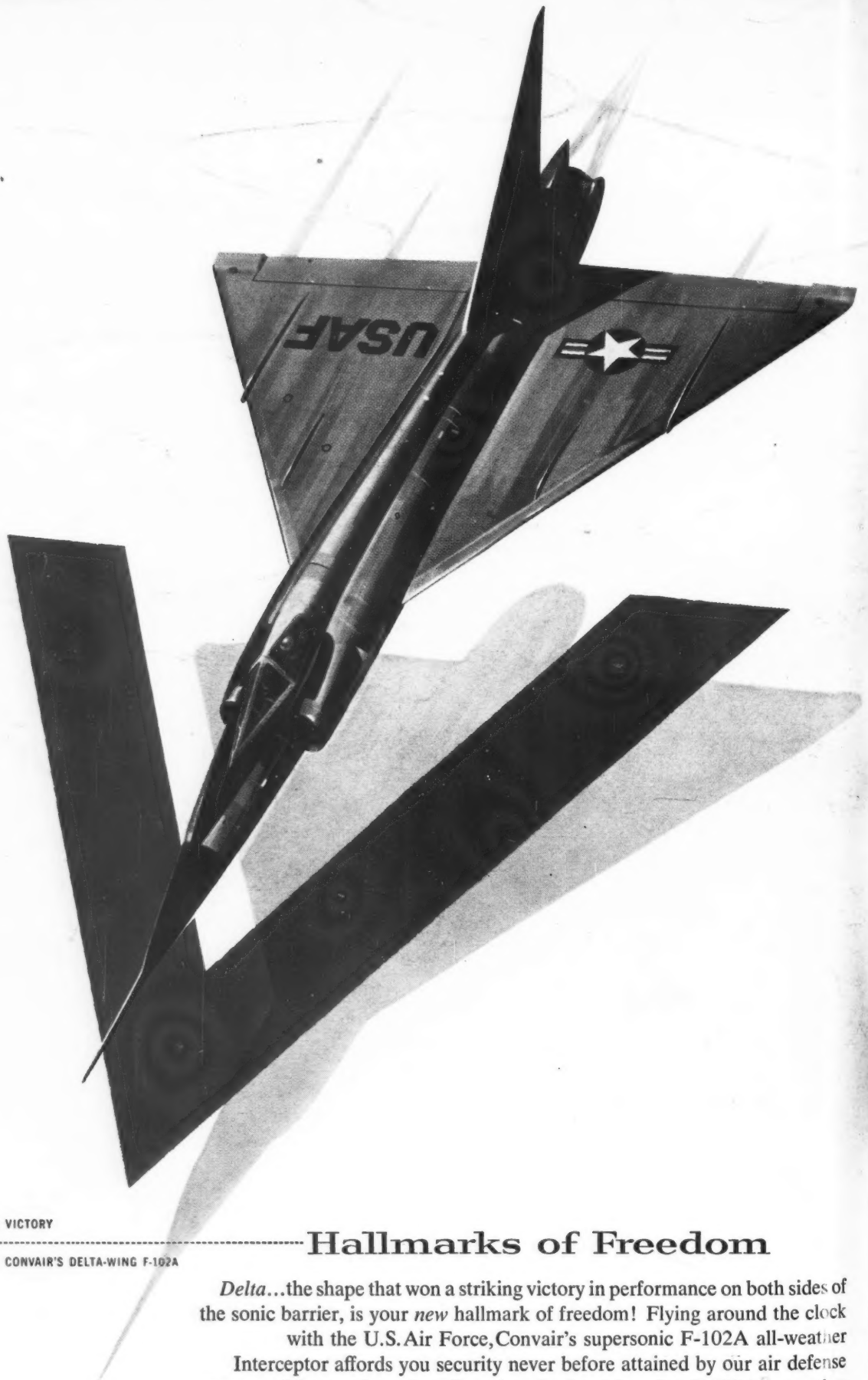

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